THE CONTRIBUTIONS OF SUSTAINABLE HEALTHY WORKPLACES TO THE ACHIEVEMENT OF THE MILLENNIUM DEVELOPMENT GOALS IN NIGERIA

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PHD

UNIVERSITY OF BRADFORD

2017

The contributions of Sustainable Healthy Workplaces to the Achievement of the Millennium Development Goals in Nigeria

Case studies of two organisations

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Submitted for the Degree of

Doctor of Philosophy

Faculty of Health Studies

University of Bradford

2017

Abstract

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Keywords

Workplace, Health, Wellbeing, Safety, Gender, Equality, Occupational Health, Diseases, MDGs

The study aimed to examine the contributions of two corporate, non-health, transnational, Sustainable Healthy Workplaces (SHWs) to the achievement of the Millennium Development Goals (MDGS) in Nigeria.

The research questions in this study sought to determine the contributions made by SHWs to combating malaria and 'other diseases' and ensuring gender equality in health at work, thus ascertaining the contributions of the studied organisations to the MDGs 3 and 6 in Nigeria.

A qualitative, eclectic case study of two SHWs was carried out. Data were sourced through documentary analysis and the use of semi-structured interviews, with 22 and 13 purposive sampled participants at organisations 'A' and 'B' respectively. Also, descriptive and thematic data analyses were utilised for numerical and textual data respectively, and these analyses were then compared and interpreted.

The results showed that both organisations contributed to the achievement of the two MDGs studied with policies and practices that were available but inadequate. Both implemented relevant and gender-specific policies but conducted inadequate workplace health promotion programmes (WHPPs). Organisation 'B' had basic structural facilities to promote healthy lifestyle choices, which were missing at organisation 'A'. Given this, there was no record of significant levels of non-communicable diseases (NCDs) at organisation 'B', unlike organisation 'A' with its remarkable record. A decline in reported cases of malaria (a communicable disease - CD) occurred throughout the study period at organisation 'A', with the highest recorded in 2012 (25.4%) and the lowest in 2014 (21.8%). No pattern was observed at organisation 'B' but the highest incidence of this disease was recorded in 2014 (75.6%) and the lowest in 2013 (30.7%).

At organisation ‘A’, there was a steady rise in sickness absences among male employees, contrary to the documented decline among that of female employees. No consistent pattern was observed regarding sickness absence for gender categories at organisation ‘B’. Deaths were recorded at organisation ‘A’ during the study period, except in 2014 when there were none. Organisation ‘B’ had no recorded mortality throughout the entire study period.

The findings from the literature review, using the Critical Appraisal Skills Programme (CASP) and Clearinghouse for Labour Evaluation and Research (CLEAR) checklists for quality assessment of the selected articles, showed that any effort aimed at preventing and combating diseases while ensuring gender equality in health among the workforce had a positive impact on stakeholders. This led to the most important element of the social and economic development agenda, including the MDGs, being addressed. Additionally, findings from organisations ‘A’ and ‘B’ revealed positive, but inadequate, and varied contributions to the attainment of the MDGs, with better performance recorded at organisation ‘B’. This implied the need for these organisations to have done more in order to make a better contribution to the MDGs. The MDGs had 2015 as their target date, but they have now been replaced by the Sustainable Development Goals (SDGs). Hence, the lesson learnt from MDGs can be transferred to the implementation of the current SDGs, which are termed the ‘Global Goals’.

Acknowledgements

I give gratitude to God Almighty and those whom He used to make this thesis materialise. I would like to take this opportunity to show appreciation to my senior and other colleagues at the Nigerian Ports Authority, where I have spent most of my career in nursing practice. First, I am thankful to Mr Y.S. Abubakar, Arch. Dan-Hassan (both retired) and Mrs H. Sanni for their initial support and encouragement to commence the programme part-time. Similarly, I do appreciate the assistance of Mr Y. Bukar, Mr and Mrs Muhammed, Dr Abama, Mr Odunuga and Mr Martins. Additionally, I give profound gratitude to Engr. B. Omiwole and Muhammed for their unrelenting support throughout the study. Also, the assistance of the following from the HSE division was of great value: Mr A. Yussuf, Mr Alabi, Engr.Talabi, Engr. D. Adeola, Engr. A. Suleiman, Mrs W. Oshikoya, Mrs C. Ejiogu, Ms. H. Abdul, Mrs F.Olanipekun and Mrs B. Oladapo. The assistance of other colleagues in the port environment, including Mr Pedro, was highly valued.

Also, I am grateful for the untiring encouragement and constructive criticisms of my supervisors, Professor Uduak Archibong and Dr Gabrielle McClelland, throughout the entire research.

I am indebted to my family (nuclear and extended) for their understanding, encouragement and support during the period of study. Appreciation goes to my husband, Muhammad, and my children, Ayatullah, Saadiq, Mawaddah and Mardiyyah. Others are my brothers, Ibraheem, Semiu, Lateef and Lukman, and a very helpful cousin, Raheemah, and cousin in-law, Ishaq. Similarly, the kind support and prayers of my mother (Mrs Mulikat Oladejo), my father (Mr Razaq Oladejo), and my sisters, Misrafah and Rukayah, throughout the study were priceless.

Finally, I would like to use this medium to thank all those who are not mentioned but who contributed to the success of this thesis.

Dedication

This work is dedicated to God Almighty, the Lord of the Worlds, who has seen me through all the varied challenges. Additionally, it is dedicated to my husband, Muhammad, and my children, Ayatullah, Saadiq, Mawaddah and Mardiyyah, for their understanding and prayers.

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List of acronyms

ACAS: Advisory conciliation and arbitration service

ACT: Artemisinin combination therapy

AMED: Allied and complementary medicine

ASSIA: Applied social sciences index and abstracts

AL: Artemether-lumefantrine

AP: Organisation 'A' participant

BMC: Biomed central

BMI: Body mass index

BP: Organisation 'B' participant

CA: Canada

CASP: Critical appraisal skills programme

CDs: Communicable diseases

CDC: Centre for disease control

CEDAW: Convention on the elimination of all forms of discrimination against women

CINNAHL: Cumulative index of nursing and allied health literature

CLEAR: Clearinghouse for labour evaluation and research

CRD: Centre for review and dissemination

CSC: Community screening campaign

CVD: Cardiovascular disease

DALY: Disability– adjusted life years

EIGE: European Institute for gender equality

EU-OSHA: European agency for occupational safety and health administration

GBA: Gender-based approach

GD: Gender diversity

GIT: Gastroenteritis

HASFOC: Heart and Stroke Foundation of Canada

HDL: High Density Lipoproteins

HR: Human Resources

HSC: Health and Safety Commission

HSE: Health, safety and environment

HSW: Health, safety and wellbeing

HSWA: Health and safety at work act

HWs: Healthy workplaces

HWS: Health, Wellbeing and Safety

ICT: Information and communication technology

IDF: International diabetes federation

ILO: International labour organisation

IPT: Intermittent preventive treatment

ITN: Insecticide-treated nets

MDGs: Millennium development goals

MEDLINE: Medical literature analysis and retrieval system online

MHSWA: Management of health and safety at work act

MiP: Malaria in pregnancy

NBS: National bureau of statistics

NCDs: Non-communicable diseases

NEPA: National electric power authority

NHS: National Health Service

NIEHS: National Institute of Environmental Health Sciences

OH: Occupational health

OHS: Occupational health service

OSHA: Occupational safety and health administration

PICO: Population, intervention, comparison and outcome

SDGs: Sustainable Development Goals

SHWs: Sustainable Healthy Workplaces

ONS: Office for national statistics

PHCN: Power Holding Company of Nigeria

PHE: Public Health England

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses

ROI: Return on investment

UAE: United Arab Emirates

UN: United Nations

UNDP: United Nations Development Programme

URTI: Upper respiratory tract infection

US: United States

USPSTF: United States preventive services task force

VSA: Variant surface antigens

WGD: Workplace gender diversity

WHO: World Health Organisation

WHPP: workplace health promotion programme

PART ONE: STUDY BACKGROUND AND SETTING THE SCENE

CHAPTER ONE

SETTING THE SCENE AND PRESENTING THE STUDY BACKGROUND

1.1 Introduction

This research examines the impact of sustainable Healthy Workplaces (SHWs) in Nigeria on the success of the United Nations Millennium Development Goals.

Nigeria, a member of the United Nations (UN), shares ideas and development objectives with fellow UN member states. As part of global development strategies, UN member states signed and set the agenda for the Millennium Development Goals (MDGs) from 2000 to 2015. The main focus of this agenda was to assist the underdeveloped and developing nations including Nigeria to eradicate diseases and poverty, promote gender equality, and improve global peace and security. Eight goals, reflected in table 1, emerged from this meeting. Among these were two relevant goals: promotion of gender equality – the MDG 3, and combating malaria and 'other diseases' - the MDG 6. These goals 3 and 6 were considered relevant by the researcher, as demonstrated in the following paragraphs, and remain the main focus in this thesis.

The rationale for the focus on goals 3 and 6 was informed by the literature review, demonstrated in chapters two and three (see, e.g., WHO 2005a; UN 2006; WHO 2009b; Haile 2012; UK Department for International Development 2012; Brouwers 2014; Kangiwa 2015), the researcher's experience in the course of daily interactions, and professional practice in the field of occupational health.

Specifically, the choice of MDG 6, which focused on combating malaria and 'other diseases' is due to the account of Nigeria's situation from the literature review in relation to this goal (details in chapters two and three). The country, as part of sub-Saharan Africa, is one of the disadvantaged nations experiencing high or even doubled prevalence of both communicable and non-communicable diseases (CDs and NCDs respectively). This makes MDG 6 an important goal and relevant to the researcher. The need to decisively address these two groups of diseases in Nigeria cannot be over emphasised as a result of their socio-economic implications. Both CDs and NCDs could result from or be taken to work by an employee. Sorensen et al. (2016) acknowledged that the workplace comprises physical, psychosocial and organisational structures capable of

negatively influencing the health, wellbeing and safety of employees. These authors noted that the risks posed by the work environment affect employees in various ways, and unequally. Muntaner et al. (2004) explained these differences as possibly arising from the different socio-economic levels to which employees belong. Hence, Pelletier et al. (2004) recognised that the workplace offers an avenue to discuss health risks and/or challenges with appropriate management strategies among employees. Health management at work can be achieved in many ways. For instance, it can be achieved by implementing relevant workplace health promotion programmes (WHPPs) directed at positively modifying employees' behaviours and/or through adjustments in lifestyles.

Furthermore, the choice of MDG 3 with focus on gender equality and women's empowerment was due to information gathered from the literature review that showed women to be historically discriminated against in all spheres of life (UK Department for International Development 2012; Brouwers 2014; Kangiwa 2015). Furthermore, the demanding and challenging responsibilities faced by typical working-class female Nigerians, arising from the nation's cultural orientation, contributed to the rationale for the focus on this goal. Culturally, the expectation of female workers is that of taking on all domestic responsibilities upon returning home from work. This situation presents a double workload for this group of workers. Conversely, men have a single workload, handling the family's financial responsibility. However, overtime, family, national and global financial burdens have increased for various reasons, including economic meltdown, technological advancement, modernisation and growth in population (Marmot 2003; Doyle 2005; Loeppke et al. 2009; WHO 2011a; OSHA 2012). Consequently, the men are unable to adequately cater for their families' financial demands. The situation has thus prompted female spouses/partners to engage in work activities to generate additional funds. Hence, in recent times, there has been a noticeable increase in women's involvement in paid employment (ONS 2009; World Development Report 2012; UN 2015). Unfortunately, the role of women in providing financial support is yet to be culturally accepted and reciprocated through men's involvement in household chores with a view to reducing the overall workload for working-class married women (WHO 2011a; UK Department for International Development 2012; Kangiwa 2015). This double workload for females poses additional risk to their health and wellbeing, making them more

vulnerable to both CDs and NCDs. Furthermore, Kangiwa noted that, with these extra risks, the cultural arrangements do not allow women sufficient time to cater for and seek the necessary personal help. However, circumstances equally exist where men are faced with poor attention to their personal health and wellbeing as a result of work overload from employment.

Promoting and sustaining the health and wellbeing of employees is advantageous to both the employee and the employer. The positive influences of these could extend to local and global development programmes, including the current 'Global Goals' (appendix 7).To this end, and because employees spend about half of their waking time at work, the literature has highlighted the vital role a healthy workplace could play in women's and men's health and wellbeing. This is well illustrated in the reviewed literature in chapters two and three.

In summary, the MDGs were among the very recent development strategies that emerged from various sources including the Universal Declaration of Human Rights, the development agenda of the 1960s, and many of the United Nations' summits of the second half of the 20th century. As mentioned earlier, the MDGs were directed at decreasing or eradicating disease and poverty and improving global health and wellbeing. These goals were recognised to represent six standards and were vital to international coexistence in the 21st century. The standards included equality, freedom, tolerance, solidarity, respect for nature and shared responsibility. In originating and formulating the goals, the Organisation for Economic Co-operation and Development contributed significantly to the emergence of the specific and relevant texts of the MDGs (Waage et al. 2010). Moreover, the United Nations member states including Nigeria were signatories to making the MDGs happen through the provision of enabling resources, which included the formulation of necessary policies and the provision of essential structural facilities in their nations. The two relevant MDGs on gender equality (MDG 3) and combating malaria and 'other diseases' (MDG 6) were sourced from the literature (chapters two and three), including the United Nations report (United Nations 2006). These assisted with the formulation of and thus provided focus for the two research questions. Subsequent paragraphs present the study background and provide more insight into the entire study.

1.1.1 Setting the scene and presenting the context of this study

The study targeted two Nigerian organisations with the potential to ensure SHWs. As a result, case studies of two corporate, non-health, transnational workplaces was carried out. The case organisations were chosen because they operate within the minimum standards for a healthy workplace. These standards are: presence of occupational health divisions and policies. Characteristics and standards of healthy workplaces (HWs) have been identified by researchers (Chu et al. 2000; WHO 2010a; WHO 2010b). Crucially, HWs was noted to advocate for a holistic plan in promoting the health of the workforce through implementation of health programmes at work (WHO 2010a). For example, workplaces with occupational health division and policies were considered to have holistic plan that will ensure a sustainable efforts in promoting employees' health. Similarly, such HWs was reported to upholds a culture, climate and practices that create an enabling environment for improved health among employees (Lowe 2004; Zungu et al. 2007), as seen in the studied workplaces. The studied SHWs had the enabling climate, culture and practices through possession of the minimum standards of having occupational health and policies to implement health programmes for the benefits of employees at work. Hence, the consideration of choosing the studied workplaces was an outcome of the researcher's experience, practice and the literature reviewed (please see chapters two and three for more details).

Specifically, inclusion and exclusion criteria (section 4.15) for the study sites were set based on the considerations for workplaces with minimum standards and characteristics to ensure a SHW. It is vital to note that SHWs are uncommon in Nigeria. Most Nigerian workplaces lack the basic structure of occupational health divisions and policies to promote a SHW. Furthermore, there is room for improvement even in developed nations with basic structures of occupational health divisions and policies to ensure a healthy workplace. However in the port environment, where this study was carried out, most workplaces are endowed with these structures to promote a healthy workplace. Hence, most of the organisations in the port environment are corporate, transnational HWs with occupational health divisions and policies to promote the sustainability of employees' health at work. As a result, they were operating better than the

average Nigerian organisation in terms of ensuring health and wellbeing in their workplaces. Being transnational organisations and with the structure, culture and climate, they readily adopt and implement national and international standards, policies, best practices and regulations on health and wellbeing at work, including the MDGs. For these reasons, the organisations studied are SHWs as identified by researchers and reports (Chu et al. 2000; Lowe 2004; WHO 2010a; WHO 2010b and Zungu et al. 2007). The impacts of these two SHWs on the achievement of the MDGs were assessed by formulating two research questions – section 1.4, which were based on personal, and professional experiences, and the literature review. These questions sought to determine the contributions made by these participant workplaces to combating malaria, and 'other diseases', and examined their efforts to ensure gender equality in health at work. Consequently, the research questions (section 1.4) focused on two relevant MDGs 3 and 6 in this study. Sections 1.2.1 and 1.2.2 provide details of the two relevant MDGs of the study.

Furthermore, health records of health challenges, sickness absence, details of WHPPs, and personal accounts by study participants, were used as indicators to determine the efforts, or contributions, of the studied SHWs in combating malaria, and 'other diseases' and ensuring gender equality in health at work. Specifically, 'other diseases' were defined as any top three reported health challenges and/or cardiovascular diseases (CVDs) or risk factors at the two studied organisations. For instance, other diseases at organisation 'A' included malaria, hypercholesterolemia and obesity, being the top three documented disease and risk factors at this organisation following analysis. Crucially, risk factors were identified as part of 'other diseases' because they are early signs of these diseases, and when not addressed, results in a full blown of the disease in concerned employee. For example, obesity and hypercholesterolemia are strong risk factors of CVDs. Importantly, the term 'other diseases' in this study could entail CDs and/or NCDs. Malaria is a CD while a CVD or risk factor (e.g., obesity and hypertension) is NCD. The planning and implementation of relevant WHPPs by organisations of study, with a view to educating or enlightening the workforce, were identified as measures or activities to prevent or combat diseases and ensure gender equality in health at work.

1.2 The study background

1.2.1 The two MDGs of the study

The aim and the research questions (see sections 1.3 and 1.4 respectively) of this study were directed at determining the contributions of studied workplaces to the achievement of the MDGs in Nigeria. However, due to time and resource constraints, it was impracticable for the researcher to ascertain the contributions of all workplaces in Nigeria to the attainment of the eight MDGs. As a result, this study explored the contributions of two SHWs in Nigeria to the attainment of two relevant MDGs 3 and 6. These two MDGs were considered relevant because of their peculiarity to the Nigerian environment, as highlighted in the preceding paragraphs (the eight MDGs are as reflected in table 1).

So, the role of the studied organisations in combating diseases and ensuring health and wellbeing at work was examined in this study – MDG 6. Additionally, the research explored the efforts of the organisations to implement gender equality in health at work MDG 3. Table 1 below presents the eight MDGs (UN 2006). **Table 1: The Millennium Development Goals.**

GOALS	**TITLE**
1	Eradicate extreme poverty and hunger
2	Achieve universal primary education
3	Promote gender equality (in health at work) and women's empowerment
4	Reduce child mortality
5	Improve maternal health
6	Combat HIV/AIDS, malaria, and 'other diseases'
7	Ensure environmental sustainability
8	Develop a global partnership for development

1.2.2 The two relevant MDGs: targets and indicators

This research aimed to determine the contributions of SHWs to the achievement of the MDGs in Nigeria. Therefore, this section elaborates on the targets and indicators of the two MDGs relevant to this study.

The two MDGs assessed in this study are MDG 3 and MDG 6. The targets and indicators of these goals are outlined below.

MDG 3: Promote gender equality and women's empowerment
Target 3A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education by no later than 2015.
Indicator 3.1: Ratios of girls to boys in primary, secondary and tertiary education
Indicator 3.2: **Share of women in wage employment in the non-agricultural sector**
Indicator 3.3: **Proportion of seats held by women in the national parliament**

The researcher's understanding of this goal reiterates the need for the same considerations or equal opportunities between genders in all aspects of human endeavour. These include employment and resource allocation on health, education and politics. Equal consideration across genders is crucial because of its direct and linear relationship with people's wellbeing, job performance, productivity and economic growth (World Bank Report 2016). Hence, the goal identified the need for gender categories to have equal opportunities and adequate resources to achieve their best in life, comprising achievement of optimal health, wellbeing and performance.

This target and two of the indicators of this goal (indicators 3.1 and 3.3) could not be utilised as the standard or template for assessment in this study. Waage et al. (2010) recognised the inadequacies of the MDG targets and indicators as assessment templates in determining the contributions of stakeholders to the attainment of the MDGs. For instance, one of the research questions in this study (section 1.4) deals with assessment of equality in health between males and females at work. Neither the target nor the indicators (except indicator 3.2) could be used as the reference point for this assessment. The study population is above the secondary school education level. As a result, this target does not provide assessment scores for this study. Consequently, the researcher used sickness

absence record, human resources document and employees' accounts of health experience to determine the extent to which gender equality in health is practised at the study organisations.

MDG 6: Combat HIV/AIDS, malaria and 'other diseases'.

Target 6A: Halve halted by 2015 and begun to reverse the spread of HIV/AIDS.

Indicator 6.1: HIV prevalence among the population aged 15–24 years

Indicator 6.2: Condom use by high-risk group

Indicator 6.3: Proportion of the population aged 15–24 years with comprehensive, correct knowledge of HIV/AIDS

Indicator 6.4: Ratio of school attendance of orphans to the school attendance of non-orphans aged 10–14 years

Target 6B: Achieve by 2010 universal access to treatment for HIV/AIDS for all those who need it.

Indicator 6.5: Proportion of population with advanced HIV infection with access to antiretroviral drugs

Target 6C: Halve halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

Indicator 6.6: Incidence and death rate associated with malaria

Indicator 6.7: Proportion of children younger than five years sleeping under mosquito nets

Combating malaria and other diseases are among the key components of MDG 6, and thus considered relevant to this study. Also, among MDG 6 indicators, number 6.6 is the relevant one to this study. 'Other diseases' (see table 2) were identified as any top three reported health challenges and/or cardiovascular diseases (CVDs) or risks at the studied organisations. This is because the researcher defined 'other diseases' as any top three health risk(s) or disease(s) predominantly identified or reported at the studied workplaces (see section 1.1.1 and table 2 for detail descriptions of 'other diseases').

1.2.3 Provisional reasons for the choice of MDG 3 and MDG 6

The two research questions in section 1.4 were derived from the relevant MDGs 3 and 6.

In addition to personal and professional experiences (see section 1.1), the literature review (see chapter three) accounted for the choice of MDG 3. Key information from the literature review is the need to establish workplace standards and best practice in relation to gender diversity (GD) and health equality. To date, few empirical studies exist on the association between workplace gender diversity (WGD) and employees' health outcomes (Haile 2012). Even the few existing ones present conflicting reports. It was therefore considered necessary to conduct a study that will explore the relationship between workplace health and gender equality to drive the contribution to knowledge.

Similarly, in substantiating the reasons provided in section 1.1, MDG 6 - combating malaria and 'other diseases', was chosen because of documented reports from the literature. For instance, it has been noted that Africans are seriously affected by a variety of CDs (UN 2006; UN 2015) and NCDs (Bloom et al. 2012).This situation is cause for concern and a concerted effort is required to overcome the disease burden in this part of the world. Specifically, the impact of these diseases on developing countries (leading to the weakening of their already-fragile economies) has been documented. Also, Principle 1 of the Rio Declaration (UN 1992) recognises the importance of people and environmental health to sustainable development. Consequently, goal 6 was considered relevant to the researcher.

Moreover, no study has investigated the effects and employees' experience of WHPPs in Nigeria. This study explored and gave insiders' perspectives on WHPPs implemented at the organisations under study, and thus offered an opportunity for feedback by participants. So, these goals provided the opportunity to explore feedback on WHPPs carried out at the case organisations.

Another fact that informed the selection of these goals is their relevance to the population of study (employees). In addition, the choice of these goals was informed by the focus of the research title on healthy workplaces (HWs). Hence, the study dealt only with occupational health and wellbeing issues. The field has direct links with employees' wellness, performance and workplace productivity. Thus, these goals were crucial to the world economy and global development,

and relevant to the researcher.

Also, with the varied feedback on MDGs' achievement among the UN member states, there was a need to assess the contributions of stakeholders, e.g., HWs (defined in table 2) in Nigeria. The information could impact on future development planning and implementation, nationally and globally.

Importantly, the choice of the two goals, the two workplaces, and Nigeria as a location for the study was necessitated by previous reports (literature review – chapters two and three) indicating high levels of CDs and NCDs in Africa. Furthermore, the choices were made based on the researcher's personal encounters and professional experiences.

1.2.4 The United Nations and globalisation

This study explored the influence of Nigerian workplaces on the attainment of the MDGs. The MDGs were adopted by the UN as one of the globalisation efforts to promote social and economic development. Consequently, this section examines the impact of the UN on world connectivity.

Globalisation has made it possible for nations, economies and societies to be interconnected and increasingly interdependent. This has brought great economic and social benefits (WHO 2011a). The United Nations' efforts to bond nations, forming a single system, permits and encourages social progress, international security, justice, civil rights, liberties and human rights (in addition to promotion of economic development).The United Nations comprises six organs: (a) General Assembly, (b) Security Council, (c) Trusteeship Council, (d) Economic and Social Council (ECOSOC), (e) International Court of Justice, and (f) Secretariat. The United Nations' strong commitment to development is achieved through one of these six organs: the ECOSOC. ECOSOC is responsible for international economy, social cooperation, development and, consequently, the MDGs.

While huge benefits are derived from world interconnectivity, there are also negative implications. With globalisation, there is a rise in informal and flexible employment (a positive contribution in terms of job creation) with an increased production. The National Institute of Environmental Health Sciences (NIEHS

2011) noted that these types of work, usually temporary, are strongly associated with ‘unhealthy’ working conditions (a negative effect of globalisation), the knowledge of which is not readily available to concerned employees. Unhealthy work environments have led to various health challenges among the workforce. This NIEHS report acknowledged that industrialisation has caused these health challenges to have a global effect. Also, it is vital to know that each employment sector has peculiar health and wellbeing implications (WHO 2011a), aside from the general ones.

1.2.5 Workplace health issues and the global economy

The study assessed the role of SHWs in the realisation of the MDGs. This segment presents the health implications of workplaces for employees, employers and the global economy.

Unhealthy workplaces and sickness absence have far-reaching effects, not only on the employees but also on their families and other social networks. Additionally, these two factors impact negatively on the productivity and performance of the affected workplaces. The negative implications of workers’ absences due to illness are enormous. These include unwarranted healthcare expenditure. Also, the NIEHS (2011) has reported that diseases and disabilities associated with poorly maintained and polluted work environments alters economic progress locally, nationally and globally. Therefore, the importance of ensuring health, wellbeing and safety at work cannot be overemphasised.

Furthermore, Hersch (2012) identified the rapid rise of chronic NCDs compared with infectious ones, which is a consequence of globalisation. The situation was found to be more severe in low- and middle-income countries (e.g., African and Asian populations). In corroboration, Goffe (2014), in a report on the European Foundation for the Improvement of Living and Working Conditions, identified that chronic health challenges were quite common among the working-class group. In the report, 20.1% of employees were recorded to have had prolonged health challenges in 2012. However, this figure is lower than the recorded 26.4% among the unemployed. Moreover, Murray et al. (2012) indicated that chronic, non-infectious diseases and associated risk factors account for the highest rates of mortality and disability globally (except in Africa, where CDs top the morbidity

list). Annually, NCDs account for the deaths of 9 million people below retirement age, 90% of which occur in low- and middle-income countries (WHO 2013a). In view of this development, Bloom et al. (2012) have raised concerns over the potential impact of this report on local and global economies. Ineffective action or lack of action in preventing NCDs was projected to cost developing nations USD7 trillion by 2025 (WHO 2013a). In particular, developing countries in Africa and Asia, which are still plagued by high incidence and prevalence of infectious diseases, are faced with threats to the positive achievements realised through the MDGs programme (UN 2006; UN 2015) with this situation.

Additionally, in a report on sickness, disability and work, employers were noted to lack or have inadequate support for chronically ill employees or those returning from long sickness absence (Sassi 2010). This corroborates the need for organisations to adopt strategies that will incorporate proactive health and wellbeing programmes for employees at work. Such programmes need to include an arrangement to support workers with chronic health challenges. The World Health Organisation (WHO) (2013a) has reiterated the significance of prompt action at an early stage of chronic disease in order to achieve meaningful outcomes for affected individuals. This requires effort from all stakeholders within the community as well as workplaces, for early and effective control or containment of chronic illnesses among the populace.

According to a document from the European Foundation for the Improvement of Living and Working Conditions, quite a number of factors are contributing to global epidemics of NCDs, especially among the workforce. Factors identified include ageing, sedentary lifestyle or inactivity, diet, work and other lifestyle issues (NIEHS 2011; Hersch 2012).

Hence, Mittelmark (2009) considered health as a vulnerable asset (which has to be protected and maintained through ensuring HWs), but not an end in itself in the world of development. The WHO (2010a and b) described a healthy workplace as one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, wellbeing and safety of all workers and the sustainability of workplaces. Based on the WHO description, a healthy workplace has significant advantages. Its positive effects or advantages can be seen in its good impact on individual employees, families

and communities, as well as from national and global perspectives. Hancock et al. (2011) have shown that a healthy workplace has an effective occupational health, safety and environmental structure in place, centred (largely) on proactive health promotion and maintenance strategies. Such establishments make it easy for staff to adopt healthy and safe practices inside and outside the work environment.

1.2.6 Gender, work and inequality

One of the research questions (section 1.4) posed by this thesis determined the contributions of workplaces to the achievement of gender equality in health at work (derived from MDG 3). This section briefly provides an overview of gender and health at work.

Approximately 40% of the world's paid employees are women (WHO 2011a). The WHO report highlighted that the proportion of employed women in developing countries is far lower than in developed countries. In addition, the proportion of women at the decision-making level is quite insignificant in both developed and developing nations. Similarly, the European Institute for Gender Equality (EIGE 2017) acknowledged that more action is needed to achieve gender balance at the decision-making level. Specifically, EIGE noted that women account for fewer than one third of national parliament members. In Nigeria, women occupied only 5.7% of parliamentary seats in 2015 (National Bureau of Statistics (NBS) 2016), indicating the need for more women at the decision-making level in order to achieve gender equality at this level.

In the perspective of gender and health issues at work, different types of employment undertaken by men and women have particular health implications (e.g., prostate cancer in men and cervical cancer in women, subject to the nature of work). Thus, women and men in the same organisation performing the same tasks may be exposed to different risks. Also, work–family relations are experienced differently by the two gender categories of employees. Such disparities in health outcomes have been known to pose gendered health inequality issues in workplaces. According to the WHO (2011b), lack of attention to or ineffective intervention to address gender discrepancies in health may be responsible for inconsistent and unwarranted health outcomes among the

gender groups at work. Hence, there is a need for conscious efforts to address these disparities.

In addressing these discrepancies between genders in social and economic matters, various programmes are being developed and executed by UN member states to achieve development objectives, including strategies to address workplace gender disparities. One such programme was the adoption of MDG 3 to reduce gender inequality in different spheres of life. This global development programme was established by world leaders in 2000. One of the intentions was to liberate the human race from gender inequality (UN 2006).

1.2.7 Concepts, essence and perceptions of the Millennium Development Goals (MDGs)

The research examined the contributions of the organisations studied to the achievement of the MDGs. In this section, the essence of the MDGs, the concepts, its importance and the views of various authors about the MDGs are presented.

In September 2000, the UN General Assembly adopted a visionary strategy that considered the world as one global village and required member states to have the MDGs as standards and core values. This strategy sets standards and addressed the need for commitment and solidarity, dignity, respect and equity, and was termed the Millennium Declaration (Easterly 2009).The MDGs were noted to have an unprecedented scope due to their global impact. They represented a form of solidarity; thus, they depicted the interconnectedness of the global community and the responsibility of countries to each other. These responsibilities related to welfare, respect for human rights, the rule of law and shared belief in human dignity (Annan 2006). The goals assisted member states to identify and set national priorities for development efforts (UN System Task Team 2012).

It is noteworthy that the MDGs were viewed in different ways (Antrobus 2003; Eyben 2006; Saith 2006). Waage et al. (2010), in the London International Development Centre report, considered MDGs to be narrowly focused, sector-specific and lacking shared vision. This report emphasised that the MDGs have

led to assembling a group of incompatible targets. This is in addition to their lack of consideration for development growth as a continuous process (requiring sustainability) to ensure the improvement of health and wellbeing. This report also identified that the MDGs were not the product of a bottom-up agenda and wider intersectoral conceptualisation of development priorities. Moreover, the report noted that the targets and indicators were not exhaustive as they often failed to capture some of the vital elements and indicators of the achievement of goals. The researcher also acknowledged this omission. Hence, 'other diseases' in this study was defined as predominant health challenges and/or CVDs or health risks or diseases and the top three health challenges reported at the organisations studied. Another report, critiquing the MDGs, considered them to be a plan designed to avoid addressing the critical issues, called the 'millennial' questions, of addressing global inequality, alternatives to capitalism and women's empowerment. In addition, some critics have identified that not all stakeholders were involved at the outset of this programme (UN System Task Team 2012). Strategic realists, such as Fukuda-Parr (2008), considered the MDGs to be an inappropriate template (or inappropriate guideline for action on development) but a necessity to stimulate political action and societal support. What all the above reports point to is the lack of support or inadequate consultation with potential stakeholders at the outset. However, supporters and modernists such as Sachs (2005) considered the MDGs to be a set of guidelines for human emancipation. Additionally, Hulme (2009) considered the MDGs to be different from any other global efforts in their holistic and systematic approach because they represented the world's biggest promise to humanity. So, despite the criticisms, without the MDGs it would have been difficult to know what development progress had been attained by nations (UN System Task Team 2012). The MDGs, being a historic and rare phenomenon, were useful in actualising a set of vital social challenges that were of paramount importance (Sachs 2012). They were an assessment chart for nations and the global community. Therefore, they stood as the basis for competition in excellence among the UN member states. Furthermore, the MDGs were a powerful influential framework for international development and networking. In particular, they assisted with the allocation of resources to development priorities among nations. The MDGs were useful as an integrated set of quantitative time-bound

targets involving efforts to provide operational definitions for the basic dimensions of human endeavour (UN System Task Team 2012). They were not legally binding, but a commitment to practical moral values. These qualities thus allowed for global awareness and acceptance. They were able to render national political forces accountable through evaluation, feedback and monitoring.

In this study, relevant targets and indicators were developed and utilised as assessment yardsticks for the two MDGs studied – 3 and 6. This was informed by the reported inadequacies of the conventional MDG targets and indicators (Waage et al. 2010; Fukuda-Parr 2008).

1.2.8 Key progress reports and strategic stakeholders of the MDGs

This study aimed to determine the achievement of the MDGs at the organisation studied. As a result, this section gives an overview of the level of achievements of the MDGs at key stages in relation to the target date (2015). Furthermore, it identifies the MDGs' stakeholders and the factors contributing to their recorded success.

The accomplishment of the MDGs varied among nations, with generally good progress documented (UN 2015). On MDG3, the UN report noted an increase of 35% (over the 1990 statistics) of women's involvement in paid labour outside agriculture. Moreover, the proportion of women's engagement in vulnerable job activities reduced by 13%, which is higher than males, with 9% reduction. Also, women have gained access to parliamentary representation in almost 90% of the 174 UN member states. However, the ratio of women's involvement to men's involvement is still low (1:5). On MDG 6, the UN report noted that the global malaria incidence fell by an estimated 37% and mortality by 58%. Over 6.2 million deaths from malaria disease were averted between 2000 and 2015. This success may be attributable to the distribution of over 900 million insecticide-treated nets (ITNs) to malaria-endemic zones in sub-Saharan Africa between 2004 and 2014.

Earlier, Sachs (2012) noted that many of the MDGs were unlikely to be met. This assertion reflected the earlier report of mixed achievements halfway to the target year (2015) when many countries were deemed to be off track (Ban Ki-moon 2008). According to this report, large parts of Africa and the least-

developed countries faced the greatest challenges in getting on track with the attainment of the MDGs. The UN secretary reiterated the need to do more to achieve gender equality and promote women's rights. Progress on MDGs occurred only where there was strong government support and good leadership. Additionally, good policies that supported private investment and productivity were marks of achievement. Moreover, sound strategies in support of public investment, with adequate financial and technical support, had a positive impact on the attainment of the MDGs. In particular, private organisations were noted to be the engine of innovation and growth for both rural and urban populations. This is because private (multinational) companies are endowed with unique strengths – worldwide reach and cutting-edge technology – and thereby provided enormous support for the attainment of the MDGs (Sachs 2012).

Essentially, developing nations were identified as needing the involvement of private businesses to complement government efforts in designing, delivering and financing MDG programmes (MDG Africa Steering Group 2008).

1.2.9 Relationship between health, sustainability, the MDGs and globalisation

The research looked at the contributions of SHWs to the realisation of the MDGs in Nigeria. This section assesses the interaction between the key concepts of the research title. These are sustainability, health and the MDGs.

Among the key concepts enshrined in the MDGs are SD and health; this is in addition to its globalisation influence (UN 2006). Also, these three concepts of the MDGs, have 'development' as a common feature. Hence, issues regarding development are not a stand-alone concept but are viewed through a sustainability lens. So, SD calls for the cooperation of all stakeholders, including government and private businesses. This will allow effective and efficient world economic (and other social) progress (Bell and Morse 2003; Conroy and Berke 2004; Vantanen and Maritunen 2005). Rockloff and Moore (2006) noted that SD embraces the participation of all as a core idea. One of the fundamental prerequisites for the achievement of the SD is broad public participation in decision-making. This includes individuals, groups and organisations (UN 1992). Also, this collaboration requires the use of technology in addressing the

pressing problem of balancing social and economic needs, together with healthy ecosystems (Byrne and Glover 2002).

In the world of development, ‘health’ is considered to be a vulnerable asset but not an end in itself. The health MDGs (4, 5 and 6) were quite strategic and fundamental to the achievement of all the other MDGs. This is because of their centrality inachieving improved health among humans and increased employee performance/productivity. Subsequently, they were significant in the attainment of the MDGs and sustainable development. However, for the purpose of this study, MDG 6 is the only health MDG that is kept in focus.

Table 2: Operational definitions of terms and key concepts.

Term or concept	Definition	Reference
Sustainable development	Ability to meet present development needs while contributing to future generational needs.	Needham (2011)
A sustainable healthy workplace or organisation	In existence for a minimum of five years and must have an Occupational Health or Health, Safety, Environment division. Additionally, it must have a health, safety and environment (HSE) policy document.	Adopted for this study
Transnational or multinational organisation	An enterprise that manages production or delivers services in more than one country - equally referred to as a Multinational organisation.	Pitelis and Roger (2000)
Health	The "ability to adapt and self-manage" in the face of social, physical and emotional challenges.	Godlee (2011)
Occupational health practice	The roles performed by all the occupational team at work. For example, the roles perform by the occupational health nurse, physician, hygienist, psychologist, safety professional, rehabilitation therapist, and ergonomist.	WHO (1994)
Safety	A state in which hazards and conditions leading to physical, psychological or material harm are controlled in order to preserve the health and wellbeing of individuals and the community.	WHO (1998)
Occupational health	The promotion and maintenance of the highest degree of physical, mental and social wellbeing of workers in all occupations by preventing departures from health, controlling risks and the adaptation of work to people, and people to their jobs.	ILO and WHO (1950)
Health inequality	Disparity in health that is avoidable, unnecessary and unjust.	Adopted to also mean inequity in this study
Corporate social responsibility (CSR)	The voluntary incorporation of social and environmental issues into an organisation's decision-making process. This is with a view to creating an avenue for employers to meet up with OHS requirements at work.	EU-OSHA (2004)
'Other diseases'	Any top three predominantly reported health challenges and/or CVDs or risks at the studied organisations.	Adopted for this study
Relevant MDGs	MDG 3 – gender equality in health at work MDG 6 – combating malaria and 'other diseases'	Adapted for this study from the MDGs
Sex	The classification of living things into male or female in accordance with their reproductive functions.	WHO (2010d) adapted to also mean gender in this study

1.2.10 Relevance of study to Nigeria

The study explored the contributions of SHWs to the attainment of the MDGs in Nigeria; thus, this section presents the importance of this study to the Nigerian setting.

First, Nigeria is a member state of the UN and a signatory to the MDGs. Second, the conducting of this study in Nigeria is of great significance, because the nation is classified among the developing nations where there has been concern about the disease burden, poor economic growth and high gender imbalance, including gender health inequity (section 1.1 highlights details).These concerns led to the formulation and implementation of the MDGs to assist member states (with an emphasis on developing nations) in addressing these deficits. The essence was to identify the areas needing commendation and improvement on the MDGs and future development plans (including the Sustainable Development Goals – appendix 7).

In summary, this study was conducted in Nigeria, with the intention of providing insight into efforts made by the nation towards the attainment of the MDGs. The research questions were directed at identifying the contributions of the organisations studied to the achievement of MDG 3 (gender equality in health) and MDG 6 (combating malaria and 'other diseases') at work. Essentially, efforts made by the studied workplaces to combat the most-reported health challenges and addressing gender inequity in health at work were examined.

1.2.11 Brief description of the study methodology

This is a qualitative case study with multiple methods of data collection. The data collection process was in two phases. Phase one involved accessing and analysing (a) occupational health and wellbeing records, (b) clinic attendance records, and (c) relevant records from the human resources (HR) division. Phase two involved conducting one-to-one interviews with consenting participants at the selected case organisations using a semi-structured interview guide.

1.3 Aim of the study

The aim of this study is to explore the contributions of non-health, corporate, transnational HWs to the achievement of the MDGs in Nigeria.

1.4 The research questions

In order to achieve a SHW, efforts are required from organisations to combat diseases (MDG 6) and ensure equal opportunities for all (including by gender – MDG 3) at work.

The literature review (chapters two and three) assisted with the formulation of the research questions in this study. For instance, in relation to the formulation of the first research question, Lowe (2004) recognised the need to identify the potential health concerns of the workforce in order to effectively combat them and achieve SHWs. Also, in relation to formulating the second research question, the literature highlighted the relationship between SHWs, employees' wellness, gender equality and productivity. The WHO (2011b) reported that a lack of attention or ineffective intervention to address gender discrepancies in health may be responsible for inconsistent and unwarranted health outcomes among gender groups at work. Earlier, Murphy et al.(2000), in a bid to identify the possible causes of higher rates of health challenges among working-class women, ascertained that the double workload (child-rearing or caring for vulnerable groups, and employment) cause these women to be disease-prone.

Furthermore, the United Nations' MDGs report (UN 2006) assisted in the construction of the research questions in this section. Two of the eight goals were chosen as part of the foundation for the research questions because of their importance to the Nigerian setting (highlighted in sections 1.1, 1.2.3, 1.2.5 and 1.2.6). The questions were set to assist with the realisation of the research aim (section 1.3), which was to examine the contributions of SHWs to the attainment of the MDGs in Nigeria. These research questions guided and informed the thesis structure. For instance, sections1.2.5 and 1.2.6 are directly related to research questions 1 and 2 of this section.

The research questions are as follows:

(i) How have sustainable healthy organisations contributed to combating malaria and 'other diseases' at work?

(ii) How have sustainable healthy organisations contributed to gender equality in health at work?

1.5 Research dissemination process

Research knowledge transfer – or, simply put, dissemination – is a planned and active process with the objective of ensuring that the people who need to know the study outcomes are reached (European Community 2007). Schober et al. (2009) affirmed the need for widespread dissemination of research outcomes to targeted audiences at all levels - local, national and internationally. Additionally, the need for user-friendly and effective communication of study findings has been discussed by these researchers. Consequently, there is increased interest in implementing research outcomes in the field by various stakeholders, with a view to getting clear and useful information to the appropriate audience which is preferably delivered through multiple channels.

Furthermore, when diffusing knowledge to the end users of a study, the impact can be determined through careful assessment and consideration of the following (European Community 2007): credibility of research source, modality of presentation of research findings, characteristics of the target audience, setting in which the message is to be received, mode or channel of communication, and characteristics of the researcher.

The dissemination strategy for this study was developed using guidelines from similar international studies including GENOVATE (UNIBRAD and Consortium 2016). The researcher planned to seek financial aid where required, to ensure effective and efficient dissemination of finding from this study (to local or national audience). This becomes necessary in order to take prompt, better and effective action on national and individual health and wellbeing, with the hope of better achievement of goal 3 (promote good health and wellbeing) and goal 5 (gender equality) of the current Sustainable Development Goals.

1.5.1 Aim of dissemination of findings from this study

The aim of the research dissemination is outlined as follows:

To improve the health and wellbeing of the workforce through creation of more awareness on predominant health challenges and risk management strategies at workplace.

To improve performance and productivity of organisations by sensitisation on predominant health risks and their control measures.

To contribute to better implementation of the Sustainable Development Goals and any future national or global development agenda through health sensitisation and enlightenment activities.

1.5.2 Target audience

1.5.2.1 Institutions

These include studied organisations that have been told that the outcomes of the study will be made available on completion of the study. Others are government institutions, especially the Federal Ministry of Health, which is tasked with the coordination of the nation's health promotion and management activities. Other ministries include the Ministry of women's affairs and Ministry of Labour and Productivity. Non-government or private institutions, including the United Nations secretariat, are among the focus for the dissemination of findings from this study.

1.5.2.2 Professional bodies

These include the Nursing and Midwifery Council of Nigeria, the Nigerian Institute of Safety Professionals and the Nigerian Medical Council.

1.5.2.3 Professional colleagues

These include occupational health practitioners, nurses and doctors.

1.5.2.4 Others

These include study participants, policymakers, employers, employees, researchers, and health journalists/correspondents - through provision of succinct written feedback.

1.6 Dissemination tool

The WHO (2014c) acknowledged that the use of varied and multiple ways to communicate research output to relevant audience increases the possibility of adoption and implementation of such findings. Dissemination modes planned for this study include presentations at various settings such as professional meetings and seminars, and using report formats locally or among international bodies. Flyers, handbills, posters and media presentations will be deployed. Other planned dissemination strategies for findings derived from this study include publications of articles about it in various relevant journals. These publications will be made in both academic and research journals that are peer-reviewed (e.g., Safety and Health at Work, Occupational and Environmental Health, Annals of African Medicine). Also, findings from this study will be disseminated to the general public (in the Nigerian context), having been simplified so that they are well understood by an average

Nigerian citizen. Such publications for the general populace will be circulated in widely read Nigeria newspapers and Nigerian Journal publications. For example, the Nigerian Journal of Basic and Clinical, Headlines.ng and the National Compendium. Moreover, with the planned involvement of journalists, there are arrangements to air the research outcomes on radio and TV programmes (via press release). Also, there is an arrangement to make the findings from this study available through electronic/online provision (including access to the report on Bradford Scholars/open access websites).

1.7 The knowledge transfer process

Effective dissemination leads to any or all of the following: (a) increased awareness, (b) understanding, and (c) commitment and action (Harmsworth and Turpin 2000; Kreps 2012). Generally, studies are carried out either to establish existing knowledge or for improvement purposes, including health outcomes among individuals/communities. In order to achieve either or both of these goals, research findings need to be suitably channelled and effectively communicated to all stakeholders.

The process of knowledge transfer from various studies is ordinarily not so straightforward. Strategic plans on how research findings will be conveyed to the desired audiences are necessary and need to be incorporated from the outset (European Community 2007). This principle has been deployed and adapted all through this study. For instance, during the monthly meetings with colleagues (PhD students), there were opportunities to showcase this study. Also, during conferences, such as Making Diversity Intervention Count 2014, 2015 and 2016, excerpts from this study were presented. Moreover, findings from this thesis were presented at the centenary conference of the Royal College of Nursing that took place in November 2016. Furthermore, during recruitment of participant workplaces and employees, relevant information was given to both, using appropriate channels of communication and framed in a manner to enhance effective understanding of the research. Also, some of the research output from this study was published in the University of Bradford postgraduate research newsletter in 2016. The future dissemination plan is as outlined in the preceding paragraphs of this chapter.

1.8 Structure of the thesis

This section outlines the thesis structure. Specifically, it explains the connections between the research questions, the research aim and the entire thesis. The thesis is divided into five parts. The current chapter makes up the part one of this thesis. This chapter sets the context of this study and presents the research background. Also, this part highlights and defines the key concepts of the research topic and the aim of the study. It defines healthy workplace (HW), sustainable development, and the essence of the MDGs. Furthermore, it explains the choice of MDG 3 (promotion of gender equality) and MDG 6 (combating malaria and 'other diseases') as the focus of this study. Lastly, the chapter outlines the research dissemination process.

Part two comprises chapters two and three and discusses literature relevant to the study. A systematic approach to the literature review was adopted. The literature review are presented under three segments (section 2.2 provides the details of the review process), this review assisted to streamline the research questions (section 1.4) of this thesis. Section 2.2.1 discusses the first segment of the literature review and directly links with the first research question (section 1.4). Section 3.2 of chapter three presents the second segment of the literature review and directly links with the second research question (section 1.4). Finally, section 3.3 discusses the third literature review segment which is directly related to the research aim and title.

Part three has one chapter, which is chapter four. The chapter highlights the research methodology, including the research philosophy, designs and methods. This is a qualitative case study research with multiple methods of data collection; thus, it allowed the researcher to determine incidences of malaria and 'other diseases' (described in table 2), as posed by the first research question (section 1.4). Furthermore, it enabled the researcher to determine annual statistics for sickness absence, and frequency of relevant workplace health promotion programmes (WHPPs) carried out at case organisations. Additionally, it allowed accounts of implemented WHPPs by study participants, and assessment of gender equality in health at work. Pragmatism was the philosophical stance, as a result of its flexibility and suitability for answering these complex research questions (section 1.4). The review of related studies served as guidance in

making the methodological choice. Essentially, the methodology chosen was appropriate for effectively tackling the research questions.

Part four comprises three chapters: five, six and seven. This part examines, analyses and presents the collected data. The chapters present findings from the two case organisations. Chapter five presents all data collected from organisation 'A', and chapter six presents the data from organisation 'B' plus a comparative analysis of the data from both organisations ('A' and 'B').The data determined their contributions to the attainment of the MDGs in Nigeria. The research questions (section 1.4) guided the presentation of data from the case organisations. Chapter seven discusses the findings using the research questions (section 1.4) as a guide.

Part five is made up of the concluding segments of this thesis, comprising two chapters: eight and nine. Chapter eight provides a summary of and conclusion of the research findings. Additionally, the chapter explores the implications of findings on future research. Chapter nine highlights the overall summary and conclusion.

Specifically, **chapter two** examines the literature extensively using articles relevant to the research topic, sourced from databases and grey literature. Basically, the first segment of the review examines articles on the first research question (see section 1.4), which focused on the MDG 6. Thus, the chapter is linked with the aim of the research, set to determine the contributions of SHWs to the achievement of MDG 6. In doing this, the review first assesses the impact of employment and non-employment on the health and wellbeing of individuals. Furthermore, the literature examines various existing strategies to prevent malaria and 'other diseases' at work. Globally, the current disease burden falls on the chronic, NCDs (including CVDs and risk factors). However, certain parts of the world, including Nigeria (where this study was carried out), are still besieged with CD diseases, with malaria ranking top of the list. Nigeria leads the world in malaria disease burden. The reviewed literature identifies the malaria infection cycle and strategies available to break this cycle (prevent human infection). Additionally, the literature explores the potential causes of chronic, NCDs with reference to best practice in curtailing and eradicating them (where possible).

Chapter three reviews literature relevant to the second research question of section 1.4 (with a focus on MDG 3, and regarding issues on gender and health at work). The review shows that more action is needed to achieve gender equity in health in the workplace. Moreover, the review concludes that more is required on gender and health at work studies with a view to either substantiating existing findings or challenging them. Furthermore, this chapter examines literature that reports the effects of a healthy workplace on employees and employers. Most reviewed articles positively emphasise the significance of a healthy workplace with dual benefits to both the employer and employees. Also, the review determined the contributions of occupational health services to the national and global development agenda (including the MDGs and the current SDGs). It concludes that occupational health services are strategic and have a direct influence on global socio-economic development. Existing regulations on occupational health and safety are examined in relation to the Nigerian environment. The findings reveal the need to enforce the existing regulations and formulate more relevant ones in Nigeria.

Chapter four outlines the research methodology for this study, as this is vital in every study. It presents pragmatism as the philosophical stance underpinning the study. This led to the adoption of multiple methods of data collection using qualitative eclectic case studies as the research approach for this study. Textual sources (primary and secondary sources) and numerical data (secondary sources) were collected, analysed and compared to ensure the study's robustness. Specifically, sources of data included clinic attendance records, human resources records/reports (organisations' service books and HSE policies) and occupational health records. Also, one-to-one interviews that were carried out using a semi-structured interview guide were among the data sources for this study.

Chapters five, six and seven present and discuss the analysis of the data from organisations 'A' and 'B' that addressed the aim of the research (section 1.3), to determine the contributions of case organisations to attainment of the MDGs in Nigeria. Specifically, chapter five outlines the analysed data from organisation 'A' and chapter six presents the data from organisation 'B'. Chapter seven compares

the analysed data from both organisations (within and across). Additionally, it discusses the overall findings from the study.

Descriptive data analysis (percentages, tables, frequency counts, bar and pie charts) was used for the numerical data. Thematic data analysis was deployed for the textual data. Both sets of data were compared and interpreted to answer the two research questions in section 1.4. Findings from this research reveal efforts made by the two case organisations to prevent/combat malaria and 'other diseases' at work (provided answer to the research question 1 in section 1.4). Organisation 'B' performed better than organisation 'A' and had structural facilities to support healthy lifestyle choices among employees. However, both organisations contributed to the achievement of gender equality in health at work (research question 2) but there is a need for improvement. Also, findings show a need for the establishment of global standards on paternity leave for fathers. This will grant them the opportunity to discharge their responsibilities to their newborn babies. The UN has the capability to lead in this initiative by setting the necessary standards.

Chapter eight gives a summary of findings (with reference to the research questions in section 1.4) on the contributions of the HWs studied to the relevant MDGs (3 and 6). The answers to the research questions in section 1.4 and the findings from the literature review assisted with identifications of study implications and its specific contribution to knowledge (including showcasing the effectiveness of workplace health promotion programmes in preventing and combating diseases). Essentially, the presentation and structuring of the data from the case organisations were guided by the research questions. Among the noted implications is the need for national and global efforts to effectively deal with the malaria disease burden. Nationally, the Nigerian government needs (as a matter of urgency), to explore and deploy alternative power sources (e.g., solar) on a larger scale and to further encourage the use of mosquito-treated nets among its citizenry. Additionally, more aid is required from international bodies to assist Nigeria in procuring the necessary resources (e.g., insecticide-treated nets) for effective malaria disease control. Also, there is a need for greater efforts to ensure that health documentations reflect gender categories.

Chapter nine presents a general overview of the thesis in line with the research aim (section 1.3), and summarises the answers to the two research questions in section 1.4 of this chapter. Additionally, the chapter summarises the findings derived from the literature review questions in section 2.1.1.1. Also, this chapter presents the final conclusion for the research.

1.9 Summary

This chapter set the context for the study, and introduced the research topic as 'the contribution of SHWs to the achievement of the MDGs in Nigeria'. Thus, the chapter set the scene of and background to the entire study. The chapter has nine sections: the introduction, the scene-setting paragraph, the background, the aim of the study, the two research questions, the research dissemination process, the thesis structure, the summary and the conclusion. Also, the chapter defined the key concepts and themes as they relate to the research aim or questions in various sections. Additionally, the chapter outlined the essence of the MDGs, including explanations of the choice of the two relevant MDGs (3 and 6). Lastly, the aim and the research questions were presented.

1.10 Conclusion

An overview of the entire research was presented in this chapter. The research aim and questions, definitions of terms, the relevant MDGs (3 and 6), the research context and the dissemination process were outlined.

The literature review follows this chapter. It is divided into chapters two and three. In order to effectively discuss the literature, chapter two first explores the interaction between health, work and diseases. Then, it discusses the literature on malaria and 'other diseases'. Chapter three discusses gender and health equality and thus establishing its link with the second research question (section 1.4). Also, chapter three presents the impact of HWs on employees and organisations. The role of occupational health and safety services in workplace's corporate social responsibility is outlined in chapter three. Moreover, this chapter (3) presents the concluding segment of the literature review.

PART TWO: THE LITERATURE REVIEW

CHAPTER TWO

HEALTH, WORK AND DISEASES

2.1 Introduction

This chapter and the next (chapter three) discuss literature relevant to this study. The literature was reviewed to serve as a baseline for understanding existing information related to the research title. The review offered opportunity to effectively address the research questions and achieve the aim of this study. Creswell (2003) noted the significance of the literature review as offering an avenue for establishing the importance of a study, and assisting in shaping the research question(s) for the study so that they have a more meaningful or realistic scope. Furthermore, the literature review provides a basis for comparison of studies related to the research.

Essentially, this research determines the contributions of HWs in Nigeria to the success of MDGs 3 and 6. Specifically, this chapter reviews and discusses the literature in relation to the first research question (section 1.4), which examines the contributions of the studied workplaces to combating malaria and 'other diseases'. As a result, the chapter examines relevant literature that discusses interactions among the concepts of health, work and disease. Furthermore, and with due consideration for the research title, aim and questions, it is vital to note that the review in this chapter and in chapter three utilises a systematic approach to the literature review (Booth and Papaioannou 2012), involving searching databases of studies. A systematic approach to the literature review can be explained as one that strikes a balance between the conventional ('traditional') and the 'formal systematic' literature review. So, the researcher adopted a review in line with the pragmatic philosophical stance used for this study. To this end, a flexible literature review process - systematic approach was deployed. This was done to best answer the research questions in this study. Relevant literature published in English language was sourced from electronic databases (details provided in section 2.1.1). Other sources of literature - grey included the use of Bradford scholar, Google, Google Scholar, journal websites, reference lists on related articles and text books, government reports, policy or issue papers, theses or dissertations, and conference papers.

It is important to note that articles, reports and other literature utilised in this review (chapters two and three) were mostly international literature except for those on malaria disease, which were typically from Africa, including Nigeria. One of the reasons for using international literature is because the study organisations were transnational organisations that implement both national and international policies to guide workplace practices and policies. Additionally, international literature was deployed for most of the review due to dearth of literature on the research topic in Nigeria and the Sub-Saharan Africa. This could be attributed to the fact that occupational health practice is just evolving in this region. For instance, very few organisations in Nigeria have an occupational health division. As such, the concept and practice of a healthy workplace is uncommon in this part of the world. Also, most workplaces in the country lack the occupational health, safety and environmental (HSE) policy; thus, limiting the existing literature on occupational health standards in Nigeria. However, a few exceptions occur with transnational organisations, which share operational standards with their international outlets (mostly located in developed countries). Such organisations provide and have occupational health services, with core responsibility to create and sustain programmes for a healthy workplace. Consequently, the use of international literature is still relevant in this scenario. Hence, recommendations from the review may be transferred into these HWs while exploring wider opportunities for transferability and contextualising these findings in the Nigerian society (at large). The literature review comprises three main segments; subsequent sections provide details of the review.

The literature review and the relevance of Preferred Reporting Item for Systematic and Meta-analysis (PRISMA) to the review process

Ordinarily, a literature review places each piece of research work in perspective so as to enable understanding of a given research problem. It gives an impression of the important literature in relation to the underlying research question (Creswell 2003). There are different categorisations of the literature review process. However, the one adopted for this study was the classification of the review process into two main parts. These were conventional (traditional) and formal systematic literature reviews (Mallett et al. 2012). These authors recognised that the difference between the two categories includes fixed guidelines for formal systematic review and the opposite exist for the traditional review (conventional review has flexible approach).

Also, they acknowledged that all formal systematic reviews follow the key principles of transparency, rigour and replicability, these attributes are displayed through the use of PRISMA, but not found in the conventional review. PRISMA is a framework typically utilised for reporting a formal systematic literature review process (Moher et al. 2011).

Crucially, this study did not implement a formal systematic review, but a systematic approach was undertaken to review the literature (Booth and Papaioannou 2012). This review – systematic approach, strikes a balance between the formal systematic and the conventional (traditional) review. Hence, attributes of both reviews exist in the literature review process deployed in this study. The review adopted PRISMA, use in formal systematic review. The use of PRISMA in this review was intended to improve the rigour and breadth of the literature search (Mallett et al. 2012). It helped with quality of reporting of the literature by displaying substantial transparency in the selection process of articles employed for the review.

Specifically, the use of PRISMA assisted with assessment of the existing relevant literature in relation to the clearly formulated literature review questions used in this review. So, similar to Mallett et al. (2012)'s assertion, the use of PRISMA in this study helped to focus on the specific three literature review questions with a view to searching the relevant literature to answer these questions. This was done with the aid of pre-specified guidelines to recognise the relevant literature. The included studies were then critically appraised using quality assessment tools – the Critical Appraisal Skills Programme (CASP) and Clearinghouse for Labour Evaluation and Research (CLEAR) quality assessment tools (CASP 2014; CLEAR 2014). Furthermore, the use of quality assessment tools or checklists for the included articles in this study, was shared from the formal systematic review. So, this process enables researchers' critical, thorough and consistent engagement with empirical evidence. This is unlike conventional reviews, which have less engagement and preconceived knowledge about studies, and more of a results focus.

Stages of PRISMA: a literature reporting system (or tool) for search strategies of articles in formal systematic and systematic approaches to literature reviews

Mallett et al. (2012) explained the distinct phases of PRISMA in a literature review to include construction of the literature review question (s) as deployed in this study (section 2.1.1.1) for the literature search. This need to and was done with due consideration for population, intervention, comparison and outcome (the PICO framework). The framework (PICO) constitutes the foundation for search strategies. Hence, a literature review protocol was made that described definitions, search strategy, inclusion and exclusion criteria and approach to synthesis (sections 2.1.1.2 and 2.1.1.3). Following this step, there was the systematic search of academic databases and institutional websites leading to the inclusion of all studies found. Subsequently, all these retrieved studies were screened to determine their relevance using the set guidelines for inclusion and exclusion criteria (section 2.1.1.3). Upon the use of the critical appraisal tools (CASP and CLEAR quality appraisal tools), relevant quantitative and/or qualitative primary studies were chosen for the review. Data were then extracted and synthesised to derive the facts/evidence outlined in the review.

Although it is of critical importance, systematic review still has flaws, especially when identifying inclusion and exclusion criteria for these may not be totally objective. This is because different researchers may interpret these determinant factors differently, hence the tendency towards bias. For instance, researchers have had cause to screen hundreds of full-text articles in the past using quality assessment tools (Mallett et al. 2012). This situation is similar to what was experienced by the researcher in the first literature review segment highlighted in section 2.2.1 of this chapter.

In summary, although the review was not a formal systematic review, the use of PRISMA in this study served as a literature search and a reporting tool that helped to improve the quality and strength of the review process by holding to the core principles of rigour, transparency and replicability (Mallett 2012). Specifically, it helped by increasing the breadth of the searched literature with a maintained focus and ensured empirical evidence but not preconceived ones as in conventional or traditional review. Thus, its strength largely relies on ensuring that researchers are

focused while enabling methodological transparency and replicability (Gough and Elbourne 2002).

2.1.1 The literature review process for chapters two and three: a systematic approach

Flow diagrams demonstrating the PRISMA of articles utilised in the three main segments of the review (Moher et al. 2011), including stage-by-stage descriptions, are presented in the corresponding sections 2.2, 3.2 and 3.3.

2.1.1.1 Literature review questions

The literature review questions are formulated in a way that assisted in streamlining the main research questions of this study outlined in section 1.4. These literature review questions are as follows:

(1) Are there existing strategies for combating and preventing malaria and 'other diseases' at work?

(2) Are there any implication of gender equality in health at work?

(3) Does a healthy workplace impact on employees and organisations?

2.1.1.2 Search strategies

In addressing the above research questions, a search for relevant literature was conducted using electronic databases including MEDLINE, CINAHL, Cochrane, Centre for Reviews and Dissemination (CRD), NHS Evidence, WHO-Health Promotion, Applied Social Sciences Index and Abstracts (ASSIA), Allied and Complementary Medicine (AMED) and Business Source Complete. Moreover, searches for relevant grey literature were conducted using virtual scholar, Bradford Scholar, Google and Google Scholar search engines. This led to the inclusion of relevant government reports, conference proceedings and working papers from research groups and committees. The involvement of grey literature provided a broader context to the review, thus ensuring assessment and inclusion of other related research output that may not be accessible in the course of searching the regular electronic databases.

2.1.1.3 Eligibility criteria

The search explored articles and reports related to the three research questions (highlighted in section 2.1.1.1) from the Millennium Declaration years 2000 to 2015 (designed to capture the relevant MDG reports plus related report up till

2017). Furthermore, the search was limited to published literature in the English language only. Also, the primary studies included were those conducted at corporate and healthy organisations. Specifically, the articles reviewed included studies conducted at corporate establishments, but exempting banks, educational organisations, studies that utilised health care workers as the study population and those that focused on mental health or psychological issues. Additionally, the review focused on articles with multiple or varied strategies in addressing workplace health and wellbeing concerns.

Generally, for the three literature review research questions, the search words and terms utilised included 'corporate health', 'healthy workplace', 'healthy work environment', 'non-health employees or workers', 'wellbeing at work' and 'health at work' . In addition, for the first question (section 2.1.1.1), other search terms included 'preventing malaria', 'combating malaria', and 'other diseases'. Moreover, other search terms added for the second question included 'gender and health', 'men's health, 'women's health', 'health inequity at work' and 'workplace health equality'. Also, other search terms (added to the general ones mentioned earlier) for the third question (section 2.1.1.1) are 'impact', 'result', 'consequence', 'effect' and 'influence'. Furthermore, 'OR' and 'AND' (Boolean operators) were utilised with the search terms to broaden or narrow the search horizon.

2.1.1.4 Quality assessment criteria

Quality assessment was performed to evaluate the strengths and limitations of relevant articles derived from PRISMA outputs. The articles included a mix of quantitative, qualitative and mixed-methods studies. As a result, two checklists were used to appraise the qualitative and quantitative components of these articles.

The CASP (2014) qualitative checklist provided the quality assessment criteria for the qualitative articles/components included. This is in line with the quality assessment criteria of Guba and Lincoln (1985) and Dixon-Woods et al.(2004). It comprises 10 items. This is presented in table 3, below.

Table 3: The Critical Appraisal Checklist Programme (CASP) for qualitative articles.

S/N	Items	Yes	No
1.	Any clear statement of the aim of the research?		
2.	Was the research methodology appropriate?		
3.	Was the study design appropriate in achieving the aim of the study?		
4.	Was the recruitment strategy suitable for the aim of the research?		
5.	Was the data collected in a manner that addressed the research question?		
6.	Has the relationship between researcher and participants been adequately considered?		
7.	Were ethical issues taken into consideration?		
8.	Was data analysis sufficiently rigorous?		
9.	Is there a clear statement of findings?		
10.	How valuable is the research?		

The quality assessment checklist adopted for quantitative studies was the CLEAR (2014) checklist. It comprises 10 items (table 4) covering the study design (including sample, data collection and quality, method of data analysis), findings from the data analysed, and the conclusion. Table 4, below, presents the checklist.

Table 4: The Clearinghouse for Labour and Evaluation Research (CLEAR 2014) checklist.

SN	Items	Yes	No
1.	Is the study design clear and appropriate for addressing the research?		
2.	Are key features of the design such as sampling design clearly described?		
3.	Are data sources clearly identified and appropriate for addressing the research questions?		
4.	Are data collection methods, sources and instruments clearly described and appropriate for the research questions?		
5.	Does data collection reflect methods that produce unbiased results?		
6.	Does the study examine a population relevant to the research questions?		
7.	Does the study discuss limitations of the sample and/or sampling procedure?		
8.	Are appropriate statistical procedures used?		
9.	Are findings fully supported by the data and analysis?		
10.	Are conclusions supported by the findings?		

In summary, the quality assessment criteria assisted with ensuring the methodological rigour of the articles used for the literature review.

2.1.1.5 Analysis and synthesis of articles for the systematic approach to the literature review in chapters two and three

This section describes the process of analysis and synthesis of the literature used for each of the three main literature review segments (sections 2.2.1, 3.2 and 3.3). The literature review questions (representing secondary research) highlighted in section 2.1.1.1 are related to the two research questions (section 1.4) of this study. Details are as provided in section 2.1.1.

The articles that were finally selected (on meeting inclusion/exclusion and quality assessment criteria highlighted in sections 2.1.1.3 and 2.1.1.4 respectively) were analysed and synthesised using convergent review. Harden (2009) and Pluye (2014) made use of this approach previously. Its (convergent review) use in this study involved separate analyses of quantitative and qualitative data, which were then brought together (integrated or synthesised) to make sense of the overall data in answering each of the three literature review questions. The key quantitative statistical findings plus the final interpretation of the qualitative textual data of the included articles represent the researcher's opinion of the cited papers. The thematic synthesis of utilised qualitative papers went through three stages. These were (a) line-by-line coding of textual data leading to (b) development of descriptive themes, and finally (c) generation of analytical themes, representing the researcher's interpretations, constructs or explanations derived from the raw secondary textual data.

Subsequent paragraphs outline the literature review details.

2.2 Presentation of the literature review segments

Section 2.1.1 offered details of the literature review process generally adopted for each of the three segments of the review. The first segment is presented in the following section. The other two segments (two and three) are presented in chapter three.

2. 2.1 Segment one: existing strategies in combating or preventing malaria and 'other diseases' at work

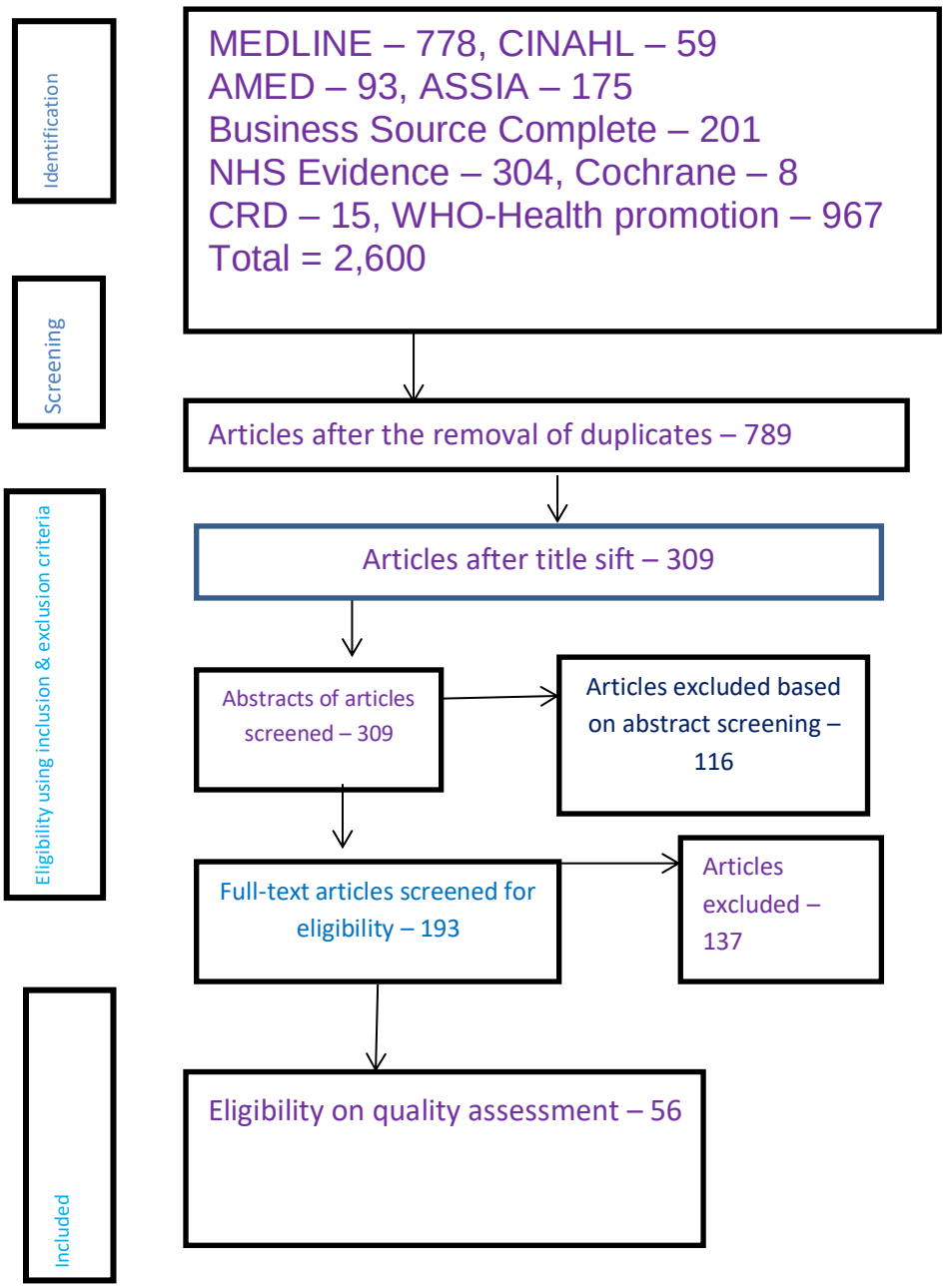
This segment addresses the first of the three literature review questions (section 2.1.1.1):

Are there existing strategies in combating or preventing malaria and ‘other diseases’ at work?

The segment is related to MDG 6 (table 1) and provides the basis for answering the first research question of this study (section 1.4). Hence, it creates the opportunity to determine the existing documented contributions of HWs to the success of MDG 6 (combating malaria and ‘other diseases’).

In addressing this first literature review question (section 2.1.1.1), the initial search showed a total of 2,600 articles from the electronic databases. Removal of duplicates left 789. Title sifts left 309 papers, of which 116 articles were excluded following screening of abstracts; 193 full-text articles were then reviewed using critical appraisal tools (CASP and CLEAR), leading to the exclusion of 137 articles. Altogether, 56 articles were used for the review. Also, relevant grey literature was used (including government reports, policy documents, working papers and conference proceedings). Please find below the PRISMA flow diagram for the first literature review question.

Figure 1: PRISMA – existing strategies on combating and preventing malaria and 'other diseases' at work.



The findings from the reviewed articles are presented under two main headings (with subheadings).These are (a) work and health, and (b) preventing and combating disease at work (with particular emphasis on malaria and CVD health diseases). Further details are outlined in the subsequent paragraphs.

2.2.1.1 Work and health

This segment is related to the title of this study, which explores the impacts of a sustainable healthy workplace on the achievement of the MDGs. Specifically, It provides the basis for answering the first research question (section 1.4), which determines the contributions of HWs to the achievement of MDG 6 (combating malaria and 'other diseases'). In order to address the first research question, effort was made to first establish the interaction between work and health. The subsequent paragraphs outline the interaction.

There is a wealth of literature on the association between work and the consequences for employees' health. It was documented in the third European Working Conditions Survey of 2000 that employment greatly determines an individual's life patterns. Thus, it dictates an employee's health and that of their family (Paoli 2001). This report noted that work is an integral part of modern life while health is fundamental to human existence and wellbeing. So, work is vital and central to an individual's integrity, self-esteem, self-actualisation. Furthermore, it provides an avenue for a person to contribute and add value to the society. Also, it provides security, opportunity to survive, social and mental health benefits for the employed individual. Essentially, work provides a sense of purpose, material, health and wellbeing to the employee.

The effects of work on health have been perceived both positively and negatively by researchers (Doyle et al. 2005). In a review of scientific evidence, from a variety of disciplines, areas of literature and methodologies, it was concluded that there are social, economic and moral arguments in support of employment (Grammenos 2003; Doyle et al. 2005). Hence, employment is significant in improving individual, family and societal health and wellbeing (Waddell and Burton 2006). Specifically, its effects range from the physical and social to the psychological effect (Paoli and Merlie 2001; Grammenos 2003). Work has been documented to be good for health through the following influencing factors: (a) effective line managers who develop, reward and respect their employees, (b) valuing employees' voice by listening to their views and concerns, (c) establishing and maintaining relationships based on trust and shared organisational values, and (d) line managers who assist employees in identifying where they fit in the bigger organisational set-up (ACAS 2012).

Also, evidence exists regarding the negative effects of work including exposure to hazards and risks. Some of these risks may be detrimental to the employee's life, health and wellbeing (Paoli and Merlie 2001). It is crucial to note that some jobs are better and healthier than others. So, not all jobs carry the same level of health, wellbeing and safety implications. Similarly, studies have revealed the negative effects of unemployment; these include stress, unhealthy lifestyles leading to chronic diseases, premature death and poverty (Doyle et al.2005). Also, Waddell and Burton (2006) reported poor physical and mental wellbeing associated with unemployment. In corroboration, Marmot (2003) acknowledged that unemployment results in a reduced level of psychological wellbeing, which can eventually predispose an individual to a higher risk of disease, including coronary heart disease. Essentially, based on the literature reviewed, being employed is better than being unemployed (Doyle et al.2005). Better still, these authors noted that it is beneficial to be in health-promoting workplaces where strategies for health risk assessment and management are well instituted in the organisation's management policy.

Considering preceding paragraphs and the fact that employees account for half of the world's population and are the main contributors to global social and economic advancement (WHO 2007), there is a need for good access to health services at work to ensure optimal health among this group of individuals (Zungu et al. 2007). Zungu identified workplaces as strategic locations to positively impact on the health and wellbeing of the employed population through health sensitisations and implementations of other relevant health programmes.

This is why the third European Working Conditions Survey (Paoli 2001) highlighted the importance of individuals establishing and sustaining a work–life balance. Work–life balance is having job flexibility and control over when, where and how to work (this is of paramount importance to employees' health and wellbeing). Among factors that positively affect the health and wellbeing of employees is a good organisational culture, such as flexible work schedules and institution of other relevant arrangements to ensure a healthy workplace (WHO 2007; ACAS 2012; Dickson-Swift 2014). The vital role an organisational culture (including a flexible work schedule) plays was stressed. Phyllis et al. (2011) and Dickson-Swift (2014) noted that flexible working hours improve the health and

wellbeing of the workforce.

In order to have a good picture of what constitutes health among individual employees, the subsequent paragraphs highlight the key concepts and definitions of health as documented by authors and reports.

2.2.1.1.1 Defining and highlighting the health concepts in this study

One of the key concepts of the research title, aim and questions is health (sections 1.3, 1.4 and 2.1.1.1). Consequently, this section – 2.2.1.1.1 explored and brought into perspective the different definitions of health, which was then related to a healthy workplace and healthy employees.

The WHO referred to health as a state of complete physical, mental and social wellbeing and not the mere absence of disease or infirmity (WHO 1948). Later on, the WHO (1986) explained it as source for everyday life (and not just a state), emphasising social and personal resources, as well as physical capacities. Moreover, health was described in line with the earlier perceptions of 1948. Consequently, the WHO (2004) explained the health concept as absence of illness, symptoms and morbidity. Jadad and O'Grady (2008) initiated a global conversation on a new definition of health. This led to contributions from an appreciable number of public participants. As a result, Jadad and O'Grady proposed and published a new definition of health as the “ability to adapt and self-manage” in the face of social, physical and emotional challenges (Godlee 2011). This is the definition of health adopted in this study, as highlighted in table 2.

Jaimez and Bretones (2011) perceived health according to psychological, physical, social and existential dimensions. They identified three themes associated with health in individuals. These are (a) the surrounding environment (life circumstances, relationships, work, physical environment, society and culture), (b) genetic influence, and (c) lifestyle and habits. These authors reported that health encompassed and required the maintenance of equilibrium among various health determinants, which include physical, psychological, physiological and social factors. In summary, Jaimez and Bretones highlighted and thus considered health to be dynamic situation, which happens as a result of individual adjustments or responses to stresses leading to maintenance of

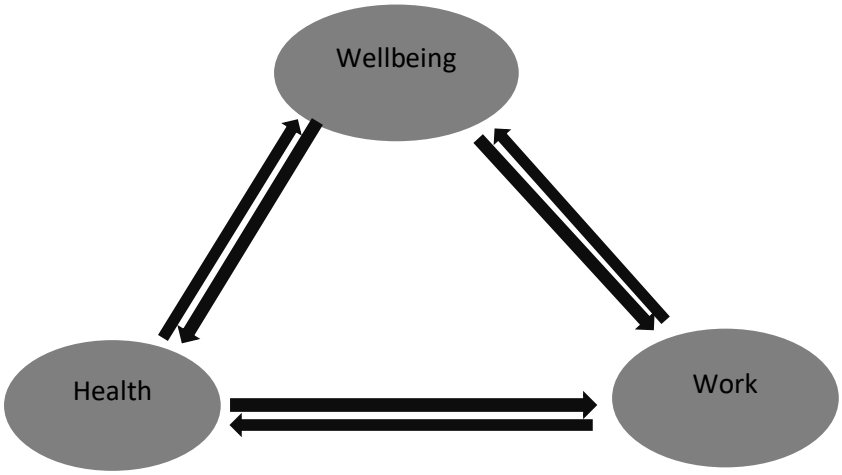
inner equilibrium (homoeostasis).

Looking at the various perceptions and explanations, a comprehensive and holistic definition would consider and examine health from both subjective and objective perspectives. However, this study adopted Godlee's (2011) proposed definition, which is the "ability to adapt and self-manage" in the face of social, physical and emotional challenges.

Also, this study adopted Lowe's (2004) definition of a healthy employee: as the one with good mental and physical health, leading a balanced life, developing their potential, and making meaningful contributions to and having a say in the decision-making process of the organisation (and not just absence of disease, injury or illness).

Figure 2 represents and summarises the interaction between work, health and wellbeing. Depending on the direction, the resultant effects of health, work and wellbeing on employees could lead to either a positive or negative consequence. The diagram shows that a healthy employee can reciprocate a positive effect with improved job performance and productivity (ACAS 2012), or vice versa.

Figure 2: Possible causal pathways between health, wellbeing and work.



Adapted from ACAS (2012)

2.2.1.2 Preventing and combating disease at work: strategic statistics

The first primary and secondary research questions (sections 1.4 and 2.1.1.1 respectively) relate to the contributions of the case organisations (studied) to combating malaria and 'other diseases' at work. So, this segment reviews and provides statistics from relevant literature on the interaction between employees' performance, sickness absenteeism, mortality and costs to employers.

Due to poor and ineffective record-keeping, particularly in developing nations, there is a dearth of data regarding employees' health, safety and performance records (Hamalainen et al.2009). However, in the United States, Gale (2003) reported a high cost of absenteeism, with 15% extra expenditure by the employer during 2002. The author noted that, on average, 3–6% of employees were absent from work on a daily basis. As a result, organisations lose about 2.8 million workdays each year as a consequence of illnesses and injuries to the workforce. Additionally, records show that about 2.3 million workers die annually from diseases and injuries (International Labour Organisation (ILO) 2011). Globally, according to ILO (2005) records, 270 million occupational accidents, 160 million occupational diseases, and over 2 million work-related fatalities were documented annually. Nearly a million of the deaths were the result of injuries, carcinogens and airborne particles (Driscoll et al. 2005). The Health and Safety Commission (HSC 2004) reported that 33 million of the 40 million days lost to sickness absence annually were attributable to ill health. Additionally, an ACAS (2012) report stated that 2 million individuals have been hurt or suffer illnesses caused or made worse by their jobs. Also, the ILO (2011) stated that a significant number of workers are employed in risky and vulnerable situations devoid of basic health and safety standards.

However, the ILO report acknowledged the impossibility of a hazard- and risk-free work environment but, recognised that risks can be managed in a manner that produces less impact on employees, productivity and the economy (locally, nationally and globally). So, consciously putting in place a workplace health risk management measures will protect employees' health, wellbeing and safety. These have several benefits for organisations (Akpan 2011). However, ACAS (2012) asserts that managing health, wellbeing and safety at work is a collective responsibility of both employee and employer and not the employer alone.

In summary, this section highlighted strategic and relevant statistics on health, disease and performance in the workplace, with negative implications for both employers and employees in organisations recording high levels of sickness absence.

2.2.1.2.1 Preventing and combating disease at work

Similar to the preceding section, this section is directly related to the research questions (section 1.4) on efforts made by organisations to combat disease at work. It is vital to note that this aspect of the literature review focuses largely on non-occupational diseases rather than workplace safety concerns. This is because new challenges in occupational health and safety practices were identified as being more of health concerns than safety issues (HSC 2004).

Specifically, the section reviews articles on the efforts of organisations to prevent and combat diseases at workplaces. Zungu et al. (2007) emphasised the work environment as a vital and crucial location for health promotion of the working-class group. Hence, workplaces were identified as a priority setting to achieve the goal of 'health for all' and to realise better health management, and reduce health care costs on CD and NCDs (by these authors). Mokdad et al. (2005) identified four leading causes of deaths from chronic disease. These were heart disease, diabetes, chronic lower respiratory tract infection and cancer. Additionally, the four top risky behaviours for chronic diseases, as identified by researchers, were physical inactivity, unhealthy eating, overweight or obesity and tobacco use. The Centers for Disease Control (CDC 2016), in a survey it conducted, reported 61.7% of the workforce to be obese or overweight, while 76.3% did not consume adequate fruit and vegetables. Furthermore, seven chronic health problems have been identified as needing proactive screening, reactive management and follow-up among working adults (United States Preventive Services Task Force (USPSTF) 2007). These are hypertension, lipid disorder, obesity, tobacco use, and breast, cervical and colorectal cancers. Also, the WHO (2005) revealed that chronic diseases account for the most common incapacitating circumstances among workers. Moreover, a report by the Heart and Stroke Foundation of Canada (HASFOC 2003) identified and noted a linear relationship between high body mass index (BMI) and the following modifiable health risks or challenges: high levels of blood glucose, lipids and blood pressure,

and certain cancers. In support, Public Health England (PHE 2016) emphasised obesity as a significant independent health risk or contributory factor to other modifiable health risks among adult employees.

Similarly, Makrides et al. (2010) identified a significant and disturbing prevalence of modifiable health threats, which have been linked to increased risk of chronic disease. Makrides et al. explained that the situation is capable of wasting employers' funds as a result of low productivity, reduced task performance and high sickness rates among workers. In a study carried out for over five years involving 51 workplaces in Canada with 2,665 males and 3,402 females, the results showed 70% of the workforce to be overweight with BMI greater than or equal to 27; 31% were reported to be obese (BMI >30); and 38% had elevated cholesterol. Up to 49% of the participants were found to be inactive (exercise < 20–30 mins and 2 – 3 times per week). Also, a report showed that the Canadian working population aged 20–59 have at least one of the chronic health risks or challenges. Examples are obesity, hypertension, physical inactivity and high cholesterol (Tanuseputro et al. 2003).

Furthermore, the higher the prevalence of modifiable health risks among employees, the more records of absenteeism (Serxner et al. 2001). Hence, Makrides noted an inverse relationship between employers' health care costs and wellness score among employees, thus emphasising the need to address and reduce preventable health risks among the workforce. Also, Loeppke et al. (2009) concluded that the cost of productivity losses due to chronic diseases outweighs that of health care by about 400%. This is why conscious efforts need to be directed at preventing or reducing sickness absence among employees. In support of this assertion, Harris et al. (2010) stressed the negative impact of chronic diseases on workers, ranging from productivity losses (through sickness absence or reduced effectiveness and efficiency in task performance) to increased health care costs.

Also, studies have recognised that presenteeism, explained as employees going to work regardless of their ailment or ill-health, causing low performance and productivity (Schultz and Edington 2007). Additionally, It has been found to cost employers more in health care expenses than disability and absenteeism (NICE 2016). Mokdad et al. (2005) noted that chronic diseases are generally the

outcome of individual negligence or negative health behaviours (and are the main causes of presenteeism).

Essentially, the reviewed literature showed that the health of workers is not determined only by occupational hazards but also by non-occupational ill health or circumstances (e.g., chronic health diseases), individual social factors and access to health services (WHO 2007). Hence, Harris et al. stressed that the workplace is strategic in meeting the health education needs of 'at-risk adults' for chronic diseases (such as obesity, diabetes and hypertension). Specific details about NCDs related (to this study) are presented in section 2.2.1.3.

2.2.1.2.2 Updates on malaria disease and global development agendas

This segment reviews the literature on malaria disease and United Nations development programmes as they relate to the research question (section 1.4). The first research question sought to determine the efforts of workplaces in combating malaria and 'other diseases'. The literature review on past prevention efforts and available strategies for combating malaria disease are presented in this section. Furthermore, the segment is directly related to the research title and aim (section 1.3) since the sixth goal of the MDGs called for a reversal in malaria disease incidence by 2015.

Malaria is a deadly infectious disease caused by parasites, transmitted when an individual is bitten by infected mosquitoes (vector-borne) (WHO 2009a). The disease has been in existence for centuries and historically it was initially thought to result from 'mal-aria', basically meaning 'bad air' (Federal Ministry of Health Nigeria 2001;WHO 2013b). This disease is endowed with complex pathogenesis, ranging from simple, asymptomatic/uncomplicated presentations in individuals to complex and complicated ones.

Globally, over 3 billion people are at risk of malaria infection (Guerra et al. 2006). The disease represents a major public health challenge in 97 tropical countries. Nigeria, where this study was carried out, has the highest number of malaria cases in the world, with almost 51 million cases and 207,000 deaths annually (Dawaki et al. 2016). An earlier report revealed 214 million cases in 2015, with 438,000 deaths (WHO 2015). Generally, sub-Saharan Africa accounted for most of the malaria morbidity (89%) and mortality (78%) and thus continues to bear a

disproportionately huge amount of the global malaria burden. Griffin et al. (2014) reported approximately 252 million cases of malaria in 2010 in sub-Saharan Africa, detectable through daily active case detection. Earlier, Chiyaka et al. (2008) had emphasised that the highest incidence occurs in developing, sub-Saharan African and Asian nations. Also, Sachs (2002) stated that malaria is among the top three CD disease killers. Furthermore, estimate shows that global malaria morbidity and mortality are between 60% and 90%, with the highest range attributable to African nations or developing countries (WHO 2002a). Hence, evidence is available to show that malaria remains a major health concern worldwide with a high potential to continuously increase mortality and morbidity among humans (Adebayo and Krettli 2011; Laishram et al. 2012; Okosun et al. 2013; Balogun et al. 2014). The highest rate of malaria transmission also occur in temperate sub-Saharan Africa, hosting a high level of *P. falciparum* dominance. This malaria strain is asymptomatic, making it tougher to control the disease in this part of the world (Hay et al. 2004).

However, there has been a steady decrease in malaria from 2002 to date. In corroboration, the WHO (2015) testified that malaria incidence has dropped by 37% globally, with a reduction of 60% in malaria mortality, leading to the prevention of approximately 6.2million malaria deaths worldwide. Specifically, malaria incidence has declined by 54% worldwide. O'Meara et al. (2010) attributed the changes and reduced malaria burden in sub-Saharan Africa to the introduction and use of long-lasting insecticide-treated nets (ITNs). In support, it has been noted that there is a global decrease in malaria disease following increments in international funding (to purchase and distribute treated nets, among other things) to eradicate malaria (WHO 2010c).

However, Griffin et al. (2014) have emphasised that the reduction in malaria transmission over the past decade only occurred in certain parts of West and Central Africa and Northern Mozambique. In corroboration, the WHO (2009a), Otten et al. (2009) and Msellem et al. (2009) revealed that progress had been made in reducing the disease mortality in some countries, including Equatorial Guinea, Rwanda and Ethiopia. The decrease was attributed to the free distribution and use of treated bed nets, intermittent preventive treatment (IPT) for pregnant women and wide use of Artemisinin combination therapy (ACT).

It is vital to note that personal immunity has a great role to play in the prognosis of malaria infection among adults in regions with moderate to severe malaria transmission. Immunity to malaria parasites is acquired over a period of time. Consequently, children have poorer prognoses to malaria infection in sub-Saharan Africa than do adults. Conversely, all age groups are affected thus with poor prognosis in non-endemic regions (WHO 2015). Complications from severe malaria could lead to neurological disorders, including impairment in the executive functioning ability of an affected individual, learning disabilities, reduced fine motor skills and other forms of brain damage (Sachs and Malaney 2002; Pattanayak et al. 2006). In corroboration, Sachs (2002) identified a particular complication to be anaemia, in addition to a reduction in cognitive development in chronic cases, especially among children.

Also, Balogun et al. (2014) reported asymptomatic malaria to be common among adults and pregnant women in sub-Saharan Africa. Kern et al. (2011) acknowledged that asymptomatic individuals remain carriers that supports malaria parasite transmission. The vector-carrying malaria (female anopheles mosquito) has over 400 species, of which almost 30 are responsible for transmitting malaria parasites by biting humans between dusk and dawn (WHO 2015). It is noteworthy that a huge controversy exists on the current methods utilised to determine the malaria burden globally. Some of the reasons are poor health records, especially in sub-Saharan Africa, and because some cases do not present at the regular health institutions (Littrell et al. 2011). Such a situation has negative consequences for policy development, project planning and implementation of malaria control strategies, as demonstrated in studies (Abeku et al. 2004; Thomson et al. 2005). Hence, Cox et al. (2007) have highlighted the need to have robust epidemiological data (including morbidity and mortality) for malaria disease. So, in a bid to address the challenge posed by malaria disease estimation, Griffin et al. (2014) have highlighted alternative disease burden estimates using empirical data to assess the relationship between the incidence of malaria and the prevalence of parasites (Hay et al. 2004). This utilises the richest available set of parasite prevalence estimates rather than making use of the limited data on the associated clinical disease. The advantage of this is that it enables follow-up estimates on the disease burden. Generally, malaria

incidence has been noted to reduce during the dry season compared to the wet period when vector populations are more widespread (Moiroux et al. 2012a).

Finally, Sachs (2002) highlighted the fact that malaria disease has a negative impact on the development agenda, causing high sickness absence and reduced productivity among the workforce, and high health care costs and mortality (among others). Hence, Burt (2014) noted that malaria contributes significantly to economic underdevelopment in the affected nations. For instance, in Nigeria, this fatal disease is responsible for 132 billion naira (approximately USD700 million) of expenditure on prevention, treatment and other associated costs (Federal Ministry of Health Nigeria 2012; WHO 2013b).

2.2.1.2.3 Prevention and control of malaria

This segment contributes to the first research question (section 1.4) by reviewing relevant articles on available preventive strategies for malaria disease.

Malaria can be prevented and treated where prompt action is taken against the disease (Sachs 2002; Makinde and Okosun 2011). An appreciable number of malaria preventive mechanisms exist, including physical and chemical methods (such as treated bed nets, insecticide sprays, treatment of affected individuals and elimination of malaria parasite carriers), with the aim of decreasing the disease's incidence and prevalence or even eradicating it totally (Okosun et al. 2013). Also, control strategies for the disease may be predetermined by the affected part of the world. For instance, the control of malaria in epidemic-prone localities represents a new challenge and thus requires a different approach in order to effectively manage the disease (Hay et al. 2001). This is because of reduced or absent clinical immunity in such areas. As a result, there is potential for grievous impact when such areas are affected by this infection (Cox et al. 2007). In support of the preventive methods for malaria disease, Okosun et al. (2013) categorised the approach to malaria disease prevention into two parts: (a) vector control, and (b) chemotherapy. Vector control is the main approach to reducing the disease, achievable through the use of indoor insecticide spraying and use of bed nets (WHO 2015). Chemotherapy involves the use of anti-malarial drugs with a view to suppressing the blood stage of this parasite. Intermittent preventive treatment using sulfadoxine-pyrimethamine is vital to pregnant women

in malaria-endemic regions (WHO 2015) and to the populations at risk. However, a study conducted by Dawaki et al. (2016) in Nigeria showed a major lack of an effective preventive approach to malaria. This gap was mostly identified in the use of treated nets for malaria vector control. Lastly, a malaria vaccine still remains a huge challenge despite several efforts to discover a suitable one (Okosun et al. 2013). Subsequent section discusses the elimination strategy for malaria disease.

2.2.1.2.4 Combating (eliminating) malaria disease

This segment corroborates the preceding one by highlighting the elimination strategies for malaria disease, which is a key theme in the first research question (section 1.4).

Combating malaria disease occurs when the malaria vector is eliminated (reduced to zero level). It is a possibility and has been achieved in Armenia - 2011, Morocco - 2010, Turkmenistan - 2010 and the United Arab Emirates (UAE) - 2007 (WHO 2015).

Detection and management of asymptomatic malaria disease carriers (individuals with asexual forms of *P. falciparum*) have been reported to be strategic and vital to successful reduction and eradication of the disease (WHO 2010c). However, there is inconsistency in identifying, difficulty in diagnosing and a lack of urgency in investigating the outcome of asymptomatic malaria disease carriers (Laishram et al. 2012). Asymptomatic carriers remained silent reservoirs and 'forgotten' malaria hosts until recently, when Laishram et al. identified this group of humans as significant for eliminating malaria disease. Asymptomatic humans are endowed with the ability to develop gametocytes that serve as a reservoir pool for the transmission and continued presence of the disease, especially within the locality (Bousema et al. 2004). Asymptomatic carriers account for about 60% of microscopy detection/screening exercises in malaria-endemic areas; a fact corroborated in a study carried out by Dawaki et al. (2016) in a Nigeria community. Findings from this study indicate that 60.6% of the participants tested positive for *P. falciparum*. Asymptomatic malaria remains poorly understood and a huge challenge for malaria prevention and eradication efforts (Laishram et al.2012).

Researchers studying asymptomatic malaria carriers identified two types of immunity among this group of individuals: (a) anti-disease immunity, which allows an individual to harbour the parasite loads with no symptoms, and (b) anti-parasite immunity, which may be responsible for the suppression of parasite loads after attainment of a certain age in an individual. This is more of an exposure-related clinical immunity (Laishram et al. 2012). Exposure-related immunity to malaria disease has been reported to exist in low-transmission regions including Brazil and Peru (Alves et al. 2002; Roshanravan et al. 2005; Harris et al. 2010). All the four strains of malaria parasites are documented to cause asymptomatic phase in individuals (Harris et al. 2010; Scuracchio et al. 2011). This is a further reason why efforts to control parasites will greatly enhance those directed at combating the malaria disease. Kern et al. (2011) concluded that strategic screening efforts, including community screening campaigns (CSC), combined with treatment of asymptomatic malaria carriers with artemether-lumefantrine (AL), have great potential to reduce/eradicate malaria incidence and prevalence. Similarly, Okosun et al. (2013) confirmed in their study that a combination of insecticides (to spray the vector) and treatment of human parasite carriers is the most cost-effective action in combating malaria. The 100% success of these combinations requires 20 days' treatment of affected individuals and 57 days' spraying of insecticides. Due to the impracticability of this first-line preventive combination/approach in humans, the researchers suggested a more realistic, cost-effective and sustainable preventive strategy involving a combination of 100% use of treated bed nets for 42 days and 87% treatment of infected human carriers for 100 days in endemic regions. So far, these comprehensive and holistic malaria eradicating efforts is yet to be documented in Nigeria.

2.2.1.2.5 Preventing and controlling parasite transmission

This segment is similarly linked to the first research question (section 1.4) by highlighting the prevention and control strategies for malaria disease through curtailment of parasite transmission.

There is a need to understand the entire cycle of malaria transmission in order to effectively control the life-threatening infectious disease (especially in the developing countries of sub-Saharan Africa). Protozoan parasites of the genus

plasmodium cause malaria and are transmitted through a bite from female anopheles mosquitoes. So, there is a long-standing host–parasite relationship between humans and malaria parasites (Joy et al. 2003).

Malaria transmission is quite unpredictable, even in endemic areas. Factors influencing parasite transmission include the location of the breeding site for mosquitoes, the climate/weather conditions, and areas with clustered human habitations (Mackinnon et al. 2000). *P.* falciparum has been reported to last (asymptomatically) in a semi-immune person for more than 18 months following infection. There is a tendency towards malaria transmission in areas where asymptomatic cases are not treated nor monitored. This situation (harbouring of parasites in individuals) could extend to dry seasons when malaria is expected to be uncommon (Vafa et al. 2007). A positive correlation has been noted to exist between high asymptomatic malaria transmission and high prevalence of the disease in countries such as Nigeria and Senegal (Dal-Bianco et al. 2007). Essentially, transmission of *P. f*alciparum from a human to mosquito requires the presence of the infected gametocytes of the parasite in an individual's peripheral blood.

The transmissibility of sub microscopic parasites from asymptomatic carrier of malaria disease has the potential to further spread the disease in endemic areas (Laishram et al. 2012). These authors have identified the most effective and efficient ways to decrease malaria in the endemic region, including the use of insecticide-treated nets, anti-malarial medications especially the ACTs and indoor residual spraying. Aregawi et al. (2014) reported a 76% decrease in slide positivity for all age groups over four years of intensive management efforts, including the use of treated nets, usage of ACT and indoor insecticide spraying.

2.2.1.2.6 Preventing and controlling the malaria vector: outlined challenges

The first research question (section 1.4) is also related to this segment because it discusses and documents the current situation with malaria vector control.

Individuals in a malaria-endemic area experience about 121 infected bites per annum, according to a study conducted in 159 malarious areas (Rogers et al.

2002). Despite the widespread distribution of treated nets for effective vector control of malaria disease, studies (Frey et al. 2006; Toe et al. 2009; Damien et al. 2016) have revealed that individuals are unlikely to utilise the mosquito nets during the hot season in malaria-endemic regions due to potential discomfort from the heat generated with this temperature. In corroboration, Damien et al. (2016) reported a 31% decrease in net use during the dry season in a study conducted in Nigeria, which increased the risk of mosquito bites and consequently malaria infection among the people (Moiroux et al. 2012b). In order to achieve effective and sustainable malaria control, these authors suggested further study of potential factors that affect net use during the dry season with the hope of identifying a permanent solution.

2.2.1.2.7 Effective malaria treatment and control

This segment highlights the recent reactive and curative modalities for malaria disease, by providing information on existing treatment and control of malaria disease from the literature, and is thus linked with the first research question (section 1.4).

Kern et al. (2011) identified the need for an effective malaria diagnostic tool and use of artemisin combination therapy (ACT) (e.g., artemether-lumefantrine) to prevent and eradicate malaria. In corroboration, in relation to reducing healthcare costs and making socio-economic improvements, Sachs (2002) reiterated the need to utilise community screening and systematic treatment of asymptomatic carriers as an avenue to effectively manage malaria disease. The use of a trustworthy diagnostic tool in combination with artemisinin-lumefantrine (as may be required) has been documented to have a major impact in reducing gametocyte carriage rates among humans, thus reducing the potential rate of infectivity among these individuals (Bousema et al. 2004). Bousema et al. noted that most of the antimalarial measures, including ACT, are directed at the asexual blood stage of *P.* falciparum. They thus highlighted the need to develop antimalarial treatments with properties that address the transmissible sexual phase of *P.* falciparum. As a result, primaquine, ordinarily utilised in the treatment of P.vivax only, is now found to be useful in clearing the submicroscopic gametocytes of *P.* falciparum (Taylor and White 2004). Another study noted that the combination of primaquine with sulphadoxine-pyrimethamine and artesunate

has been reported to be useful, efficient and safe in clearing P.falciparum gametocytes and asexual parasites identified during microscopy (Weerasinghe et al.2002; Shekalaghe et al.2007).

Also, intermittent preventive treatment (IPT) (a full course of anti-malarial treatment) is recommended to the population at risk, irrespective of the individual's status of infection. This includes the use of artemether-lumefantrine (Ogutu et al. 2010).

Despite the identified line of malaria treatment, Korenromp et al. (2003) found that drug resistance does occur with malaria treatment, and there has been an increase in morbidity and mortality from malaria in Africa since 1990, attributable to the spread of drug-resistant malaria from South East Asia to this region. Korenromp acknowledged people living in non-malaria-endemic regions are instrumental in the development of drug-resistant malaria. Consequently, Hay et al. (2004) have suggested that affirmative efforts directed at limiting malaria parasite transmission outside Africa have the potential to curb the spread of the disease significantly and globally. Such action will help reduce the spread of drug-resistant malaria.

2.2.1.2.8 Human populations at risk of malaria disease

This segment highlights the various groups that are at risk of malaria disease, including Nigerians. This segment is thus related to both the research aim and the first research question (sections 1.3 and 1.4).

Globally, about 3.2 billion people (approximately 50% of the world's population) were at risk of malaria in 2015 (WHO 2015). The WHO report noted that the number of individuals 'at risk' for malaria disease increased from 0.9 to 3 billion from 1900 to 2002. Based on these statistics, approximately 48% of the global population remain exposed to the risk of malaria infection. Among the regions of the world, the European region is the only territory that has consistently shown a decline over time in the population at risk of malaria infection (Hay et al. 2004). These authors noted that the American region has remained almost stable in terms of malaria risk. However, and in contrast, there is an increase in the population at risk in the African region and the South East Asia region. The population at risk grew from 0.06 billion to 0.65 billion during the 20th century and

over 80% remain in the hyperendemic and holoendemic malaria areas. In Nigeria, 97% of the total population are at risk of malaria disease (WHO 2014a). The South East Asia region (largely India) experienced a more dramatic increment of 0.2 billion to 1.5 billion people at risk of malaria disease (Hay et al. 2004). However, consistent growth in the population at risk is not a characteristic of the Western Pacific region.

2.2.1.2.9 Malaria disease and gender

This segment is linked with the first and second research questions of this study (section 1.4).

The literature is yet to give a detailed account of the impact of malaria disease on gender equity. Despite its impact on females, this area is under-researched (Greenwood et al. 2007). Findings from the studies available demonstrate that interventions addressing gender inequalities in poor/developing nations are vital and strategic in resolving the malaria pandemic (Dkhil et al.2014). Malaria poses a huge health problem to the affected individual and in particular to vulnerable groups (including females) in poorly developed and endemic regions (Sachs and Malaney 2002; Naidoo et al. 2011; Lowassa et al. 2012). Also, malaria in pregnancy remains a huge health concern due to the potential health effects on the mother and the child (Menendez et al. 2007). Malaria-endemic regions (sub-Saharan Africa) account for the highest rates of morbidity and mortality in pregnancy. Most of the reviewed literature on malaria and gender (Falade et al. 2007; Menendez et al. 2007; Efunshile et al. 2011; Ameh et al. 2016; Oke and Salihu 2016; Oyeyemi et al.2016) highlighted the biological susceptibility of pregnant females to malaria. Estimates have shown that malaria-related anaemia causes approximately 10,000 maternal deaths and 100,000 infant deaths annually in Africa (Guyatt and Snow 2004). In Nigeria, malaria is responsible for approximately 11% of maternal mortality. Desai et al. (2007) noted that malaria in pregnancy has the capacity to cause congenital infection, preterm delivery and loss of reproduction. Pell et al. (2013), in a systematic review to determine the effect of malaria in pregnancy (MiP), reported that poor maternal health and defective birth outcomes mostly occurred in sub-Saharan Africa. In support, it was affirmed that malaria has a negative impact on foetal development (especially at the early stage of pregnancy due to reduced immunity), and on

children in the endemic areas (Sachs 2002). However, successive pregnancies have demonstrated a reduction in intensity of malaria infection, attributable to the development of antibodies against variant surface antigens (VSA). These were noted to be present in the parasitised RBC affecting the placenta, referred to as variant surface antigens of pregnancy-associated malaria (VSA-PAM) (Rogerson 2010). Additionally, the report highlighted that women's financial empowerment and social status had an impact on malaria incidence among this gender group. In contrast, Dawaki et al. (2016) reported a lack of gender difference in malaria incidence and prevalence (asymptomatic carrier).

Overall, and from the above, malaria infection constitutes an additional health hazard to females; thus, pregnant working-class women require extra support and resources in order to achieve gender equity in health at work.

2.2.1.3 Preventing and combating CVDs and risks

Combating 'other diseases' is one of the concepts of the first research question (section 1.4), and it includes CVDs or risks.

CVDs represent a huge health challenge in the contemporary world. It is reported to top the global mortality list, accounting for 17 million deaths in 2010 (Murray et al. 2012). Fuster (2014) showed that the disease burden has moved from conventional CDs to NCDs. The implication of this change for economic and social development has been highlighted (Yusuf et al. 2004; WHO 2005a; WHO 2009). In corroboration, Deaton et al. (2011) have shown that mortality and morbidity have reduced from infectious diseases while the opposite is the case for the non-infectious ones. The increase in mortality and morbidity from non-infectious diseases was explained to have resulted from increased exposure to poor or unhealthy diets, physical inactivity and other negative environmental factors attributable to globalisation. These researchers noted that globalisation has made the populace adapt to unhealthy dietary intake, leading to high sugar and fat consumption. Similarly, Gaziano (2008) reported CVDs to be the leading cause of morbidity, responsible for 30% of mortality. The WHO (2009b) estimated that CVDs caused three times more deaths than infectious diseases in 2005 including HIV/AIDS, malaria and tuberculosis combined. The WHO (2005b) noted that CVD has no boundary and thus it affects everyone but, with a far-

reaching consequences for developing nations/sub-Saharan Africa. Thus, it contributes 80% of the global mortality for NCDs. Hence, Sub-saharan Africa is not only hugely affected by CDs (e.g., malaria) but, also faced with non-CDs or health challenges leading to premature mortality (Muchira et al. 2015). The dearth of statistical data in this region has prevented proper evaluation of the disease burden. Schnabel et al. (2014) noted that most of the chronic health challenges (e.g., diabetes and hypertension) are undiagnosed in sub-Saharan Africa, with approximately 85% of people having diabetes and 66.3% of individuals having hypertension (raised blood pressure). Lopez and Mathers (2006) stated that the per capita burden of CVDs in sub-Saharan Africa increased between 1990 and 2000 and mortality is predicted to more than double in this region between 1990 and 2020. Additionally, Msyamboza et al. (2011) acknowledged that over 80% of CVD mortality occurs in low- and middle-income countries. Also, the lower socio-economic group in developed nations is reported to have a higher prevalence of attributable risk factors, higher disease incidence and a higher number of deaths. There are reports of 95% undiagnosed hypertension in some parts of sub-Saharan Africa (Malawi). In one of the Asian nations (India), NCDs are responsible for two thirds of recorded diseases and 53% of total deaths; this was expected to increase up to 59% in 2016 (Muchira et al. 2015). These authors have argued that the delay in identification and management of NCDs may contribute to the high premature mortality in this region compared with other world regions.

Moreover, and specifically, a global estimates revealed that heart disease and stroke will be the leading causes of morbidity and disability in 2020 (Fuster and Kelly 2010). Fuster (2014) reiterated the negative economic impact of the NCDs on different organisations across nations. Unless urgent action is taken, epidemiological modelling by the WHO has revealed, Africa will account for 216.8 million cases of raised blood pressure and 23.9 million cases of diabetes in 2030 (Schnabel et al. 2014).

In addition to factors earlier mentioned, there are many other risk factors associated with CVDs. Such factors include demographic variables, family history, smoking, inactivity/sedentary lifestyle, high serum cholesterol, obesity, diabetes and hypertension. Other risk factors identified include infection, low birth

weight, folate deficiency, abdominal obesity, social stress, low income and poor education (Mackay 2004; WHO 2009b). Also, Assah et al. (2011) have noted double causative factors for CVDs. These are related to both urban dwelling, as a result of dietary issues (Institute of Medicine 2003), sedentary lifestyles (Fuster 2014), and rural dwelling (Muchira et al. 2015). However, Mathenge et al. (2010) has reported higher CVD prevalence in the urban setting compared to the rural setting.

Deaton et al. (2011) identified varied and effective strategies in tackling, preventing and combating modifiable risk factors of NCDs. These include physical exercise, healthy eating and smoking cessation (WHO 2009b). Okrainec et al. (2004) have acknowledged the challenges involved in developing/sub-Saharan African nations, particularly in complying with the preventive and control strategies for CVDs. These nations lack or have only partial management strategies to address the common chronic health problems. The majority of health education/counselling activities are delivered to those with chronic diseases and at clinical settings. The bulk of undiagnosed individuals with chronic health problems have no access to health education (Kiberenge et al. 2010). Furthermore, Kiberenge et al. in a bid to identify knowledge, attitudes and practice as they relate to diabetes among Kenyans, noted that the challenges to the prevention and reduction of these chronic health problems are linked with a lack of or inadequate health education in this region. Other challenges include cultural value for those with high BMI (this is taken as a sign of wealth and goodness, and sometimes as a mark of respect). Hence, individuals with these CVDs or risks are resistant to dietary modification as a preventive or control strategy against NCDs.

A study has shown that running or brisk walking for as little as 5–10 minutes a day at a slow pace or at an average of 6miles/hr contributed significantly to a decrease in morbidity and mortality from all causes including CVDs (Lee et al. 2014). These authors affirmed the important contribution of exercise to an individual's health and wellbeing. Evidence-based guidelines on physical activity have shown that a minimum of 150 minutes of moderate to intense exercise or 75 minutes of vigorous aerobic exercise per week is required to make a meaningful impact in preventing and controlling NCDs (WHO 2013a).

2.2.1.3.1 Obesity

Obesity is among the 'other diseases' adopted for this study, and hence relates to the first research question in section 1.4.The existing literature was reviewed to determine the association between obesity and CVDs. The findings are presented in the following paragraphs.

Sturm (2007) observed a consistent increment in obesity over decades with a rise in morbid obesity. This study revealed 70% of adults to be either overweight or obese. This is unlike 40 years ago, when there was a 40% record of obesity among adults (Lavie et al. 2009). Morbid obesity accounts for 3% of obesity prevalence in the United States (Sturm 2003). Duncan (2010) documented overweight adults as being more at risk of CVDs than normal-weight individuals, which was explained to be the result of a potential decrease in physical exercise among overweight individuals.

Also, Yusuf et al. (2004) acknowledged inactivity as one of the major causal factors of CVDs, and this has been documented to be increasing globally with a higher percentage in developing nations. In corroboration, other researchers (Church et al. 2011) attribute obesity to inadequate involvement in leisure-time physical activities (as a result of job engagement) and reduction in household chore activities. Another causative factor of obesity is poor or unhealthy dietary intake (Swinburn et al. 2009). In contrast, Dankel et al. (2016) reported that physical activity had no influence on the associated risks of obesity/overweight. However, most studies demonstrated a linear relationship between obesity and physical activity. On average, an individual burns 100 calories/mile on foot. However, a study has noted that excessive deliberate weight loss could be fatal or at least detrimental to human health (Lavie et al. 2014).

The effects of obesity on cardiovascular health have been outlined (Lavie et al. 2009). These include negative effects on ventricular structures and functions, increased blood pressure, glucose and plasma lipids (WHO 2013a). The report acknowledged other effects, including coronary heart disease, heart failure and atrial fibrillation. Dankel et al. (2016) demonstrated that duration of obesity in an individual might be directly related to potential for CVD or risk among humans.

It has been suggested that obesity is responsible for 20% of total deaths (Masters et al. 2013). Hence, Dankel et al. (2016) concluded that obesity and overweight are linked to poor health outcomes. In contrast, Sturm (2007) documented that overweight individuals (BMI 26–29) have a survival rate from CVDs (of 6% or more) than individuals with normal BMI (18.5–25). Hence, these studies have demonstrated good prognoses for CVD in overweight individuals compared to lean persons (Lavie et al. 2009).

Furthermore, it was noted that efforts to control and manage obesity have been identified to include the need for equity and social justice among humans. Also, such efforts require the provision of opportunities that encourage healthy choices at work or within the community setting (Lawlor and Chaturvedi 2006; Friel et al. 2007).

In conclusion to this segment of the review, generally, obesity and overweight are with a negative consequence on the CV health (Lavie et al. 2014).

Figure 3: Projected mortality from chronic diseases in Nigeria.

Source: WHO (2005a)

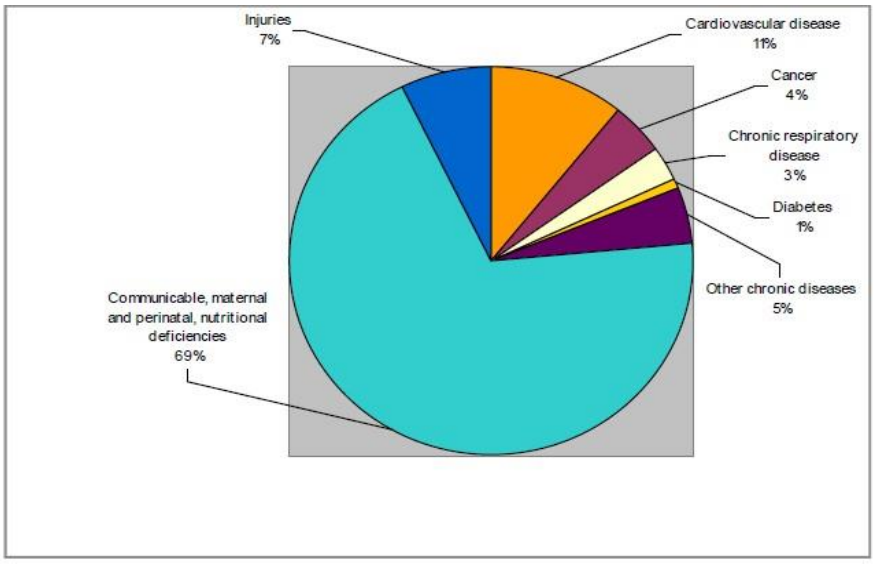
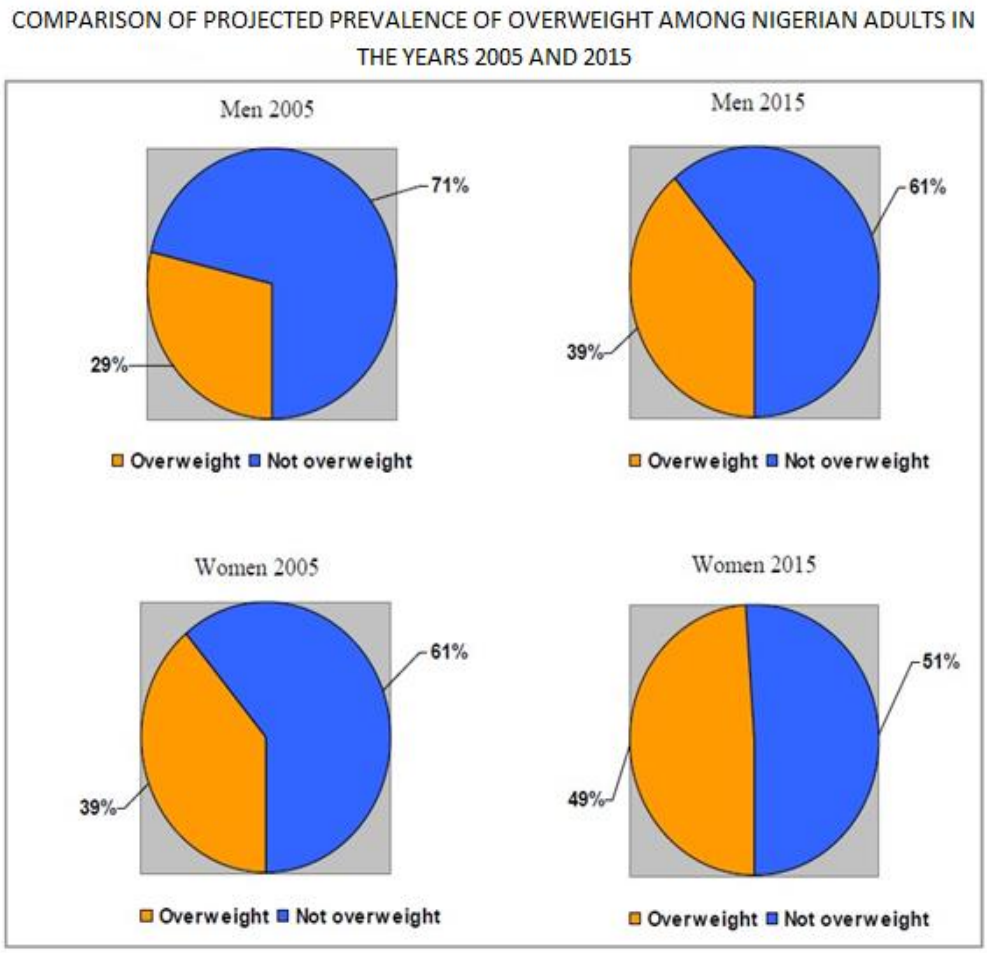


Figure 4: Projected prevalence of overweight among adult Nigerians (aged 30 years or above) between 2005 and 2015.



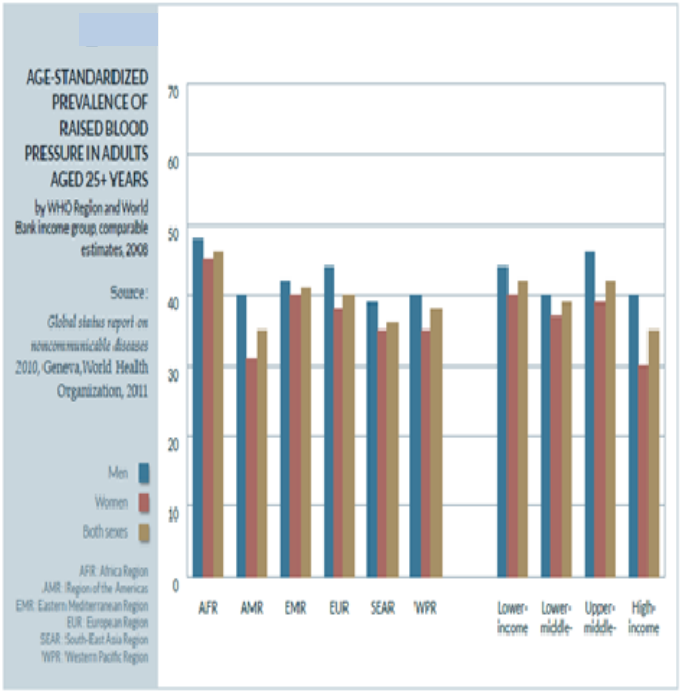
Source: WHO (2005b)

2.2.1.3.2 Hypertension

This section is related to the first research question (section 1.4) as it highlights the current trend of cases of high blood pressure globally. Hypertension is categorised among 'other diseases' in this study. As such, it relates to the first research question in section 1.4.

High blood pressure is documented as the leading risk factor for CVDs, affecting one in three adults (Perkovic et al. 2007). Figure 5, below, shows the prevalence of hypertension by age (25 years upwards).

Figure 5: Prevalence of hypertension from age 25 years by continent.



Source: WHO (2013a)

The above figure shows that 40% of the adult population aged 25 years and above was diagnosed with high blood pressure in 2008. Worldwide, and of about 17 million deaths caused annually by CVDs, hypertension accounts for 9.4 million deaths (WHO 2009b). After HIV/AIDs, hypertension is the second leading disease ravaging the African continent (Opie 2005). The WHO (2014b) estimated hypertension prevalence in African countries to be 40% of the adult population, with approximately 10–20 million people affected in sub-Saharan African. Earlier, Kadiri (2005) estimated the national prevalence of hypertension in sub-Saharan African countries to be 15–30% in adults. This researcher stated that obese persons do have a higher prevalence of hypertension than their lean counterparts. Also, obesity negatively influences rates of coronary heart disease,

leading to increased prevalence of left ventricular hypertrophy. However, in a study conducted over two years by Uretsky et al. (2007) among 22,576 participants receiving treatment for hypertension and coronary heart disease, all-cause mortality was reduced among obese hypertensives compared with the lean participants. However, excess mortality was recorded among participants with an extreme state of obesity (morbid obesity) (Lavie et al. 2014). Additionally, these authors noted that purposeful weight loss led to significant improvement in arterial blood pressure. Figure 8 highlights the predisposing factors to hypertension.

2.2.1.3.3 Diabetes

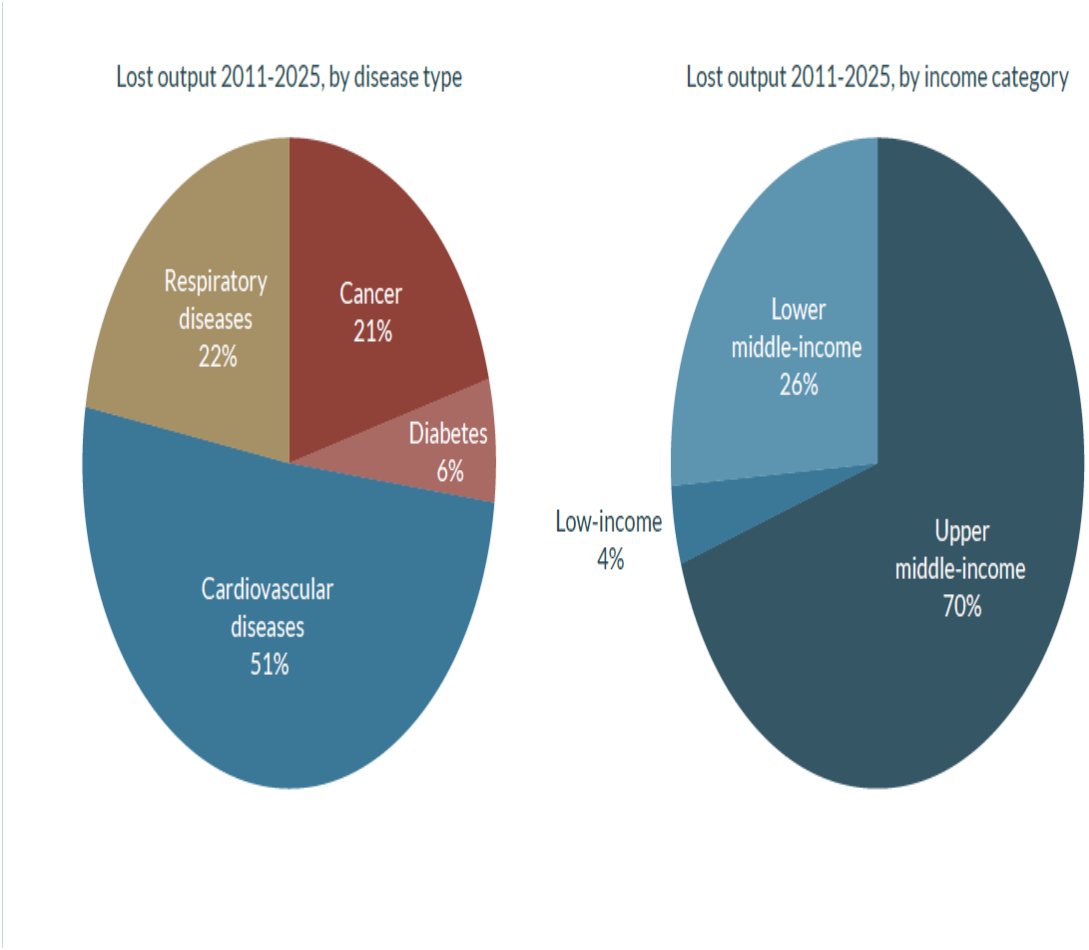
This segment relates to the first research question (section 1.4) by presenting trends of high blood sugar (diabetes) cases globally. Diabetes is one of the common chronic disease conditions affecting health and wellbeing of workers, thereby impacting on their job performance. It is one of the 'other diseases' in this study.

Specifically, type 2 diabetes (most common among adults and particularly the working class) is increasing at alarming rates in underdeveloped and developing nations with significant impact on their economies (Marrero et al. 2012; Yang et al. 2013). An International Diabetes Federation (IDF 2010) report documented that one in two individuals are undiagnosed with diabetes, leading to many preventable complications (including blindness) and early deaths from disease (including heart diseases). The WHO (2013a) indicated that type 2 diabetes is increasingly affecting the working-class group, making it a threat to the world economy and social development. Additionally, the IDF (2010) estimated that there are 12 million people with diabetes worldwide.

The process of controlling and managing diabetic disease requires lifestyle interventions. These include exercise, mild weight loss and dietary changes. Incorporating these strategies has been noted to decrease type 2 diabetes among individuals (Tuomilehto et al. 2001; Knowler et al. 2002; Milani and Lavie 2003). However, the Look AHEAD Research Group (2013) could not substantiate the impact of minor weight loss among participants with diabetes.

In summarising the impacts of chronic NCDs, figure 6, below, shows different types of NCDs and projected loss of productivity by employees.

Figure 6: Percentage loss of productivity associated with the top four global chronic non-communicable diseases.

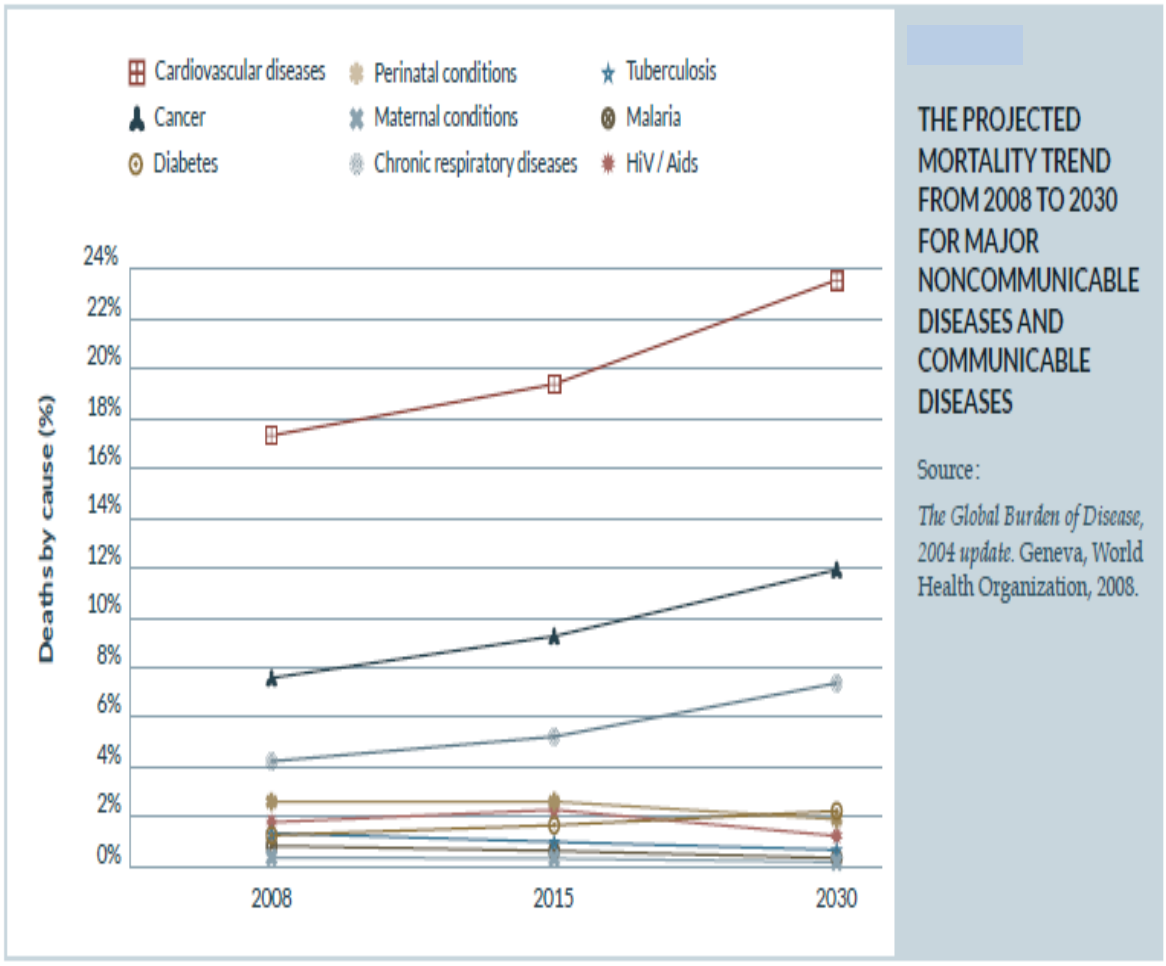


Source: WHO (2013a)

Figure 6, above, shows the CVDs (including hypertension) projected to cause 51% of predicted productivity losses by 2025.

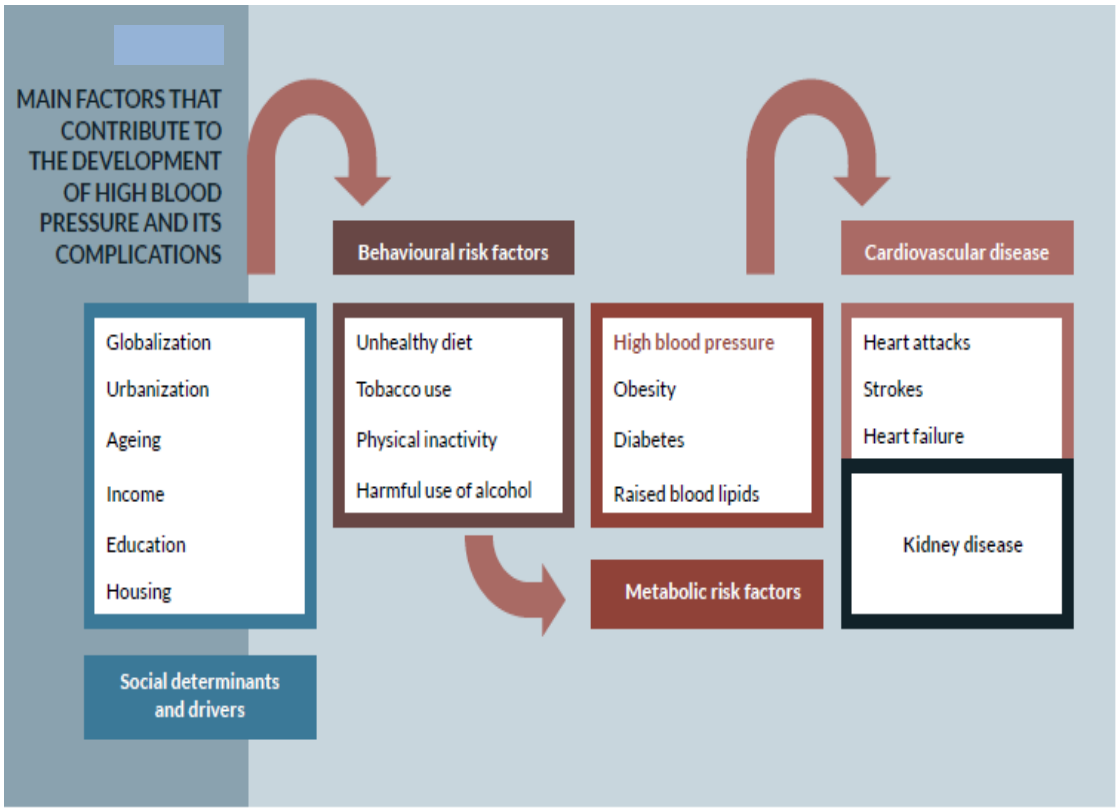
Also, figure 7, below, demonstrates the estimated mortality trend from 2008 to 2030 for major NCDs.

Figure 7: Estimated mortality for major non-communicable diseases from 2008 to 2030.



Source: WHO (2013a)

Figure 8: Predisposing factors for cardiovascular disease



Source: WHO (2013a)

2.2.1.3.4 Gender and Cardiovascular disease

This segment is linked with the second research question (section 1.4) of this study and presents the existing literature on gender and CVD or health issues. The second research question determined the contributions of workplaces to gender equality in health, with a focus on CVDs or risks ('other diseases').

Deaton et al. (2011) acknowledged high incidence and prevalence of CVDs among women. Deaton et al.'s study reported increased CVDs among Hispanic or Latin American subjects with high BMI. A total of 6,547 men and 9,797 women participated in the study. The finding showed a high prevalence of diabetes and hypertension, and reduced high-density lipoprotein (HDL) cholesterol levels among participants with BMI greater than or equal to 35. This situation was more among women than men. In support of these findings, a study conducted in the Middle East revealed that the rates of obesity and hypertension recorded were higher in women than in men (Motlagh et al. 2009). Also, Kaplan et al. (2014)

identified greater prevalence (>50%) of hypertension, diabetes and hyperlipidaemia in women than in men, especially among participants with class III obesity. However, Mensah et al. (2005) reported equal prevalence of high blood pressure for both sexes, while rates of hospitalisation for total heart disease were higher in men than in women, but rates of stroke were higher in women than in men. Life expectancy was found to be higher in women than men, based on Mensah et al.'s study.

Specifically, Kaplan et al. (2014) showed that more women (7%) have morbid obesity (class III) than men (4%). Archer et al. (2013) have suggested that a decline in household chores among women might have contributed to obesity in this gender group, with current average energy expenditure (rated as 1,800 calories/week) lower than that of five decades ago.

Additionally, Jackson et al. (2011) acknowledged that females were unlikely to be proactively assessed for CVD or risk. This is why, Berger et al. (2009) explained, females tend to present with CVD at an older age. This is probably due to a lack of time available for females to take care of themselves as a result of the double workload. In corroboration, Arnold et al. (2011) and Lauffenburger et al. (2014) reported delayed action and treatment for females. Hence, there is a need to ensure that appropriate assessment and management are carried out within this gender group (Graham et al. 2007) for prompt detection and control. This is possible in a community or healthy workplace that implements relevant WHPPs. Anand et al. (2008) also revealed that women were older than men when affected with CVDs and significant differences exist in disease outcomes and complications (females had poorer prognoses than males). Xu et al. (2015) have attributed gender differences in CVDs outcomes to inequities in health intervention and biological differences. Essentially, differences between genders in relation to CVDs could be attributed to either underlying biological differences or health inequalities (in terms of access to healthcare, socio-economic influence or psychosocial issues).

In summary, the literature has stressed the need for concerted efforts to prevent and combat diseases particularly among developing nations. MDG 6 - combat malaria and 'other diseases', reiterated the need for nations to come up with

programmes that will support the' realisation. Consequently, workplaces were identified as a viable locations to plan and implement relevant and effective health and wellbeing programmes that can lead to disease prevention, control and eradication among employees.

2.2.1.3.5 Workplace health promotion programmes (WHPPs): a review of effectiveness in achieving optimal health among employees

This segment is also linked with the first research question (section 1.4). It offers documented effects of WHPPs in combating diseases and attaining optimal health among the employed population.

Goetzel and Ozminkowski (2008) defined workplace health promotion programmes (WHPPs) as activities planned and implemented by the employer to prevent and address disease among the workforce or to prevent disease progression from the initial level to a severe one. This is with a view to improving employees' health and wellbeing. In order to preserve the life and health of employees (human resources), it is important to put in place a well-planned, systematic, preventive and health-promoting programme in the workplace (Zungu et al. 2007).

Mokdad and Marks (2004) noted that individual health behaviour or lifestyle contributes to development or control of chronic health challenges (in or outside the work environment). For example, in the United States in 2000, 365,000 recorded deaths (15.2% of total recorded deaths) were attributable to a combination of poor diet and physical inactivity. Hence, Zungu et.al. (2007) acknowledged the importance of implementing WHPPs to address unhealthy lifestyles among employees.

Workplace health promotion is identified as being offered at three levels – primary (directed at a healthy workforce, such as educating employees on healthy eating and physical fitness), secondary (directed at those at risk, e.g., employees who are obese or who have high cholesterol) and tertiary (directed at workers with existing ailments such as diabetes, asthma and hypertension) – with the aim of reducing the disease impact. Additionally, tertiary-level programmes include supporting affected workers to comply with medication instructions and follow up relevant appointments (Goetzel et al. 2007).

Also, it has been noted that any WHPP must be implemented for a minimum of one year in order to be meaningfully assessed and for results to be credited to such an intervention (Moore et al. 2000). These authors noted that any outcome attributed to a WHPP implemented for less than one year may be misrepresentative. Aldana (2001) suggested an average of 3.5years to determine the effectiveness of a WHPP. Additional benefits documented for WHPPs by this author include early risk or disease detection (particularly at the pre-symptomatic phase), improved health awareness (through useful corresponding health information) and prompt referral to health care professionals (for employees with high levels of health risk). Aldana admitted that individualised counselling for 'high health risk' employees was the most effective and significant WHPP. Meanwhile, Deaton et al. (2011) concluded that both individual and group approaches are useful in promoting heart health and preventing or controlling CVDs.

Specifically, successful intervention strategies must take into consideration the particular needs of an organisation in order to effectively prevent and combat disease in the workplace (Lowe 2004). Generally, in the past, WHPPs used to target a single ailment or risk factor of disease. They overlooked the effects of organisation and environment and social health determinants (Chu et al. 2000). Hence, Lowe (2004) argued that a WHPP focusing on one issue was inadequate to achieve a healthy workplace. Lowe noted that adjustment to a job, work design, organisational systems, management practices, workplace culture and environment are more important and effective in achieving HWs than interventions targeted at individuals only. As a result, there is a need to increase and improve employees' knowledge and skills to manage health within and outside the workplace.

Successful factors for WHPPs are divided into four categories (Chu et al. 2000): (a) participation–all workers must be part of the process from top to bottom and across the hierarchy, (b) project management, including needs assessment, planning, implementation and evaluation, (c) integration – it must be integrated into the organisational management plan, and (d) comprehensiveness in relation to the individual, organisation and environmental needs.

Furthermore, Queensland (1996) summarised 12 principles of a health-

promoting workplace in a report termed ‘Better Health for Working People’. These are as highlighted below:

1. Cost-effective. Generally and to date, employers appreciate good value for the money spent on the business and employees.

2. Supports the workplace health and safety plan. A workplace health promotion programme must be part of a big picture or system in a workplace. It should not stand alone and must fit into the organisational plan of health, wellbeing and safety.

3. Managed by the workplace. In all ramifications and for sustainability, a WHPP is better coordinated by the workplace. Having a designated occupational health department/division affords such an opportunity.

4. Considers needs assessments. It is vital for a WHPP to reflect the peculiar requirements of a workplace (contextualising the WHPP) for effectiveness and impact purposes.

5. Voluntary participation. Individual employees should be encouraged and not coerced into participating in any WHPP. They need to be given the freedom to decide if they wish to be involved. The importance of such a programme should be established and employees must have the opportunity of informed consent before taking part in such activities.

6. Training on health promotion principles. Professionally trained individuals (e.g., occupational health practitioners) who have been taught the principles of health promotion must conduct the WHPPs.

7. Suitable. Consideration of the suitability of a WHPP is strategic to employees’ health, wellbeing, safety, performance and productivity. There must be reasons to implement each of the WHPPs and they must be relevant to the organisation’s goals.

8. Involves social justice. Open access must be given to all in planning and implementing WHPPs. They must address the needs of the diverse workforce, for example gender needs.

9. Evaluation process. On implementation, all WHPPs must have an evaluation procedure or plan to determine their effectiveness. For instance, this study essentially assisted in evaluating the WHPPs at the organisations studied. This had not happened at the two workplaces prior to this research being conducted.

10. Involves a mixed-strategy approach. A variety of approaches to the implementation of WHPPs provides opportunities for a wider scope or effectiveness among individual employees. Approaches to learning differ across individuals; for instance, utilising a particular strategy may not meet the learning needs of all. Some WHPPs could be more impactful with hands-on practical demonstrations.

11. Considers family involvement where necessary. The role of family support in health and wellbeing cannot be overemphasised. Thus, the family must be co-opted where required to achieve the desired outcome of health and wellbeing among the workforce.

12. Considers the structures, cultures, laws and policies of the workplace. A good WHPP needs to consider and contextualise its activity by adapting the local provision in a workplace. It needs to be flexible and fit into an organisation's big picture without compromising the achievement of improved health and wellbeing among the workforce.

    Despite the accrued benefits of WHPPs, authors have noted the potential negative consequences of such activities, including workers' unwillingness and refusal to participate due to fear of detecting a health risk or breach of confidentiality. Also, regarding the recorded successes of WHPPs in community settings (including organisations), Ebrahim et al. (2006) opined that there is no consistency in the success of these activities. They noted that there was little or no effect on CVD and mortality, in a Cochrane systematic review of the effect of multiple risk factors for primary prevention of CVD and associated mortality. However, most of the available evidence highlighted the positive influence of WHPPs when and if 'rightly' implemented (relevant, needs-based and with adequate resources).

Finally, achieving sustainable development, particularly on social and economic platforms, becomes practically impossible if workers' health and the work environment are not given the required attention. Such efforts demand organised, proactive monitoring and need to offer interventions to potential health problems at work. Proactive monitoring and prompt intervention are possible through curtailment of sickness absence, productivity losses and deaths among the workforce. The effectiveness of such proactive programmes depend largely on the organisation of relevant WHPPs, including early detection and intervention of illnesses among the workforce (WHO 2012).

2.2.1.3.6 The business case for workplace health promotion programmes

This segment is linked with both research questions (section 1.4) as it discusses the impact of WHPPs in combating diseases and ensuring gender equality in health on organisations' business activity.

Over the last two decades, experimental and quasi-experimental studies have concluded that WHPPs do yield good financial output (Aldana 2001; Pelletier 2001; United States Department of Health and Human Services 2003; Chapman 2005). This is particularly useful for programmes that make use of specific and personalised programme to guide counselling of individuals with high levels of health risk. Also, WHPP is cost effective for employees (Goetzel and Ozminkowski 2008).

Chapman (2005) utilised and summarised findings from 56 studies that examined the economic consequences of WHPPs for employees. These studies revealed lower health care and sickness absenteeism costs in 25–30% of participants compared with non-participant groups. Similarly, only four (non-randomised design) of 32 reviewed studies (the other 28 used randomised design) had a negative conclusion and reported WHPPs to be non-useful economically (Aldana 2001). Moreover, Aldana (2001) highlighted that 14 studies focusing on the impact of WHPPs on sickness absenteeism showed significant reductions, irrespective of the research design. Three of these studies documented values for ROI ratio ranging from USD2.50 to USD10.10 for every dollar spent. Similarly, the report pointed to 'acceptable' signals demonstrating the usefulness of multi-component WHPPs in realising long-term positive behavioural adjustment among

employees. Also, the indirect or non-financial benefits of promoting health at work have been highlighted (WHO 1999) to include decreased absenteeism, increased productivity, reduced musculoskeletal complaints, reduced employee turnover, reduced claims, and improved organisational effectiveness and efficiency, leading to improved performance and productivity. Also, the WHO (2005b) reiterated the cost-effectiveness of implementing broad WHPPs and instituting the necessary workplace health policies (e.g., non-smoking policies or restricted smoking areas in the workplace) to employers. Up to 50% of associated disability and even death from heart disease could be eliminated through cost-effective preventive strategies directed at individual employees in the workplace.

Moreover, Wang et al (2007) demonstrated the cost-effectiveness of incorporating physical activities for sedentary obese workers. Furthermore, Goetzel and Ozminkowski (2008) asserted in a review that a well-designed WHPP can improve performance, productivity and employees' health outcomes.

2.3 Summary

This chapter discussed findings from the first literature review. It presented analysis, synthesis and interpretation from relevant literature directed at exploring existing knowledge on the research aim (section 1.3) and the first research question (section 1.4). The chapter outlined the interaction between health and work. Specifically, the chapter examined the relevant literature, and documented the positive and important contribution of employment to an individual's health and wellbeing. Also, it presented relevant literature on the prevention and eradication of disease at work. The review in this chapter is linked with MDG 6, which requires member states to combat HIV/AIDs, malaria and 'other diseases'. However, due to a significant reduction in new HIV/AIDs infections globally, and comprising Nigeria, where the study was carried out, HIV/AIDS was not kept in focus in this review and study. Malaria is still a major concern in Nigerian communities (such as in the private and public sectors), so, it was a main focus in this study. Moreover, the literature reviewed demonstrated the magnitude of malaria disease in developing nations, with Nigeria ranking top in terms of the incidence and prevalence of the global malaria disease burden, hence, remained a focus.

Additionally, based on the researcher's experience and previous research reports, it was clear that chronic health problems (NCDs) associated with a sedentary lifestyle are issues for concern (in terms of morbidity and mortality) in the country of study. This is why NCDs are kept in focus (captured under 'other diseases') in this study. Also, chronic NCDs are of significant impact in the world, with CVD diseases presenting the highest global morbidity and mortality among humans. Diabetes is among the worrying health challenges, ranking fourth in the global chronic NCD burden.

Furthermore, findings from review studies demonstrated the negative impact of poor hygiene and unhealthy lifestyles on incidence of disease. Prevention, control and management strategies were highlighted in line with available global best practice from the literature reviewed. Also, the literature emphasised the workplace as a vital and strategic setting to prevent and curb the spread of diseases through planning and implementation of relevant WHPPs.

There is a dearth of literature on the contributions of non-health organisations to the achievement of the MDGs (including the realisation of goal 6 – preventing and combating malaria and 'other diseases'). The literature review indicated the need for employers to provide the necessary facilities (structural and organisational policies, among others), including establishing a division/department coordinating health, wellbeing and safety affairs at work (e.g., OH division). This will facilitate the organisation of WHPPs that will reduce prevent or combat (eradicate) of diseases, and promote employees' health and wellbeing.

Overall, the researcher concentrated on and thus reviewed literature that focused mainly on HWs with strategies targeted at improving the health and wellbeing of the workforce. These strategies include reducing sickness absence, combating diseases and improving performance among employees. Consequently, this chapter outlined the impact of preventing and combating disease at work. This is directly linked to MDG6, and SDG3 of the 'Global Goals' with a target year of 2030 (appendix 7).

2.4 Conclusion

The first literature review segment was presented in this chapter using a systematic approach to literature review (Booth and Papaioannou 2012), and involving the use of PRISMA to illustrate the included articles for the quality assessment. Two checklists for quality criteria were adapted for this review. The first is the qualitative Critical Appraisal Skills Programme (CASP 2014) (in line with quality assessment criteria outlined by Guba and Lincoln 1985, and Dixon-Woods et al. 2007). The second is Clearinghouse for Labour Evaluation and Research (CLEAR 2014) for quantitative studies. Literature relevant to the research topic which examined the existing strategies on prevention/eradication of malaria and 'other diseases' were reviewed. The literature was sourced from databases and grey literature. Key findings from the literature revealed various ways to prevent malaria and 'other diseases'.

The next chapter presents the second and third literature review segments.

CHAPTER THREE

GENDER HEALTH EQUITY AND WORKPLACE CORPORATE SOCIAL RESPONSIBILITY

3.1 Introduction

This chapter is a continuation of the literature review (please see section 2.1 for details of methods adopted in reviewing the relevant literature). It comprises two literature review segments: segments two and three.

Segment two is directly related to the second research question outlined in section 1.4 since it discusses the relevant literature on gender and health equality at work. The third literature review segment is related to the research aim (section 1.3) and title of this thesis. This third segment reviews the literature and thus presents findings from the literature review questions in section 2.1.1.1. More precisely, the third segment highlights the impact of a healthy workplace on employees and organisations.

Additionally, the link between the three literature review segments (the first segment was presented in chapter two, while the last two are in this chapter) is presented in this chapter. The roles of occupational health services in relation to the corporate social responsibilities of an organisation are defined and highlighted in this chapter. Moreover, the relevance of occupational health and safety to the achievement of the relevant MDGs (2 & 3) is explored in this chapter. The two main literature review segments are outlined in the following paragraphs.

3.2 Segment two: literature review on gender equality in health at work

As mentioned in the previous paragraph, this segment relates to the second research question (section 1.4), which in turn relates to the research aim (section 1.3), by establishing the up-to-date achievement on gender equality in health at work.

The research question for this literature review segment is presented below:

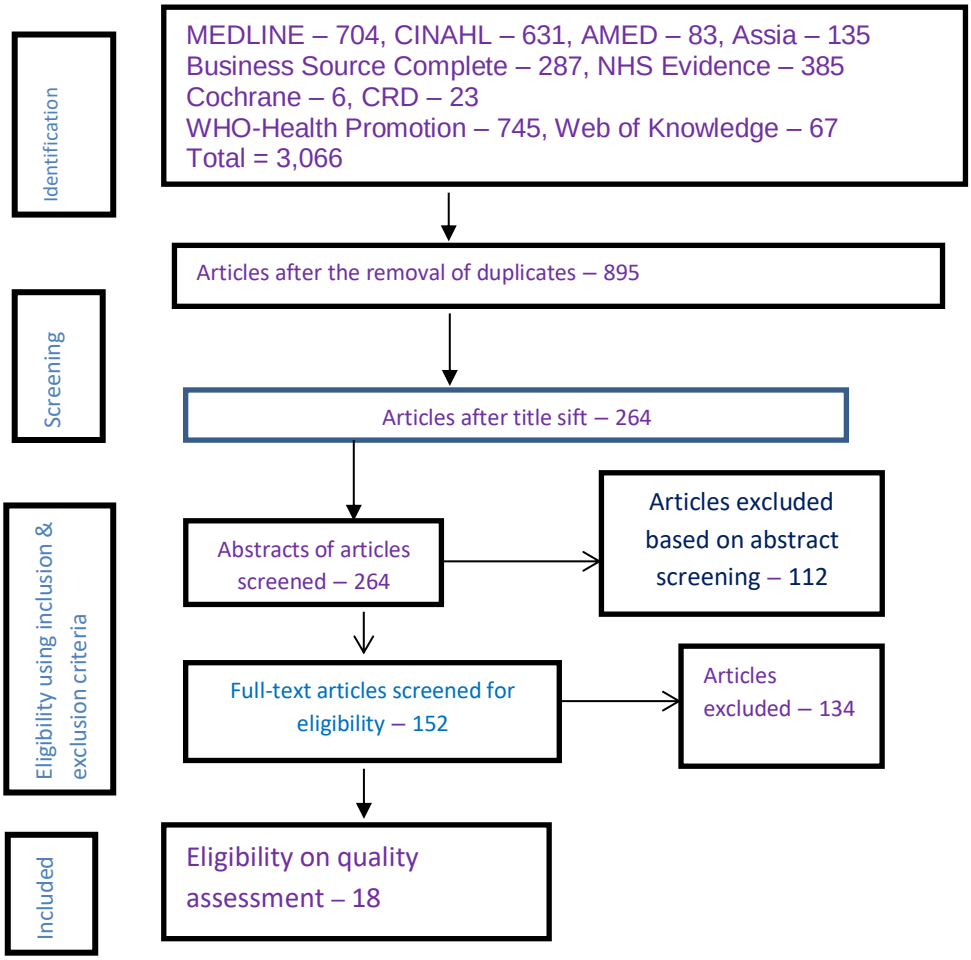
Are there any implication for gender equality in health at work?

A systematic approach to the literature review was adopted to identify and screen the literature using inclusion and exclusion criteria (see section 2.1). This

approach led to the final selection of literature utilised for the review. Section 2.1.1 of chapter two outlined a detailed process for the review.

The preliminary search produced a total of 3,066 articles, leaving 895 after removal of duplicates. Title sifts of these articles left 264 papers, of which 112 articles were excluded following screening of abstracts. The remaining 152 full-text articles were reviewed, leading to the exclusion of 134 articles; 18 that met the eligibility criteria using the CASP/CLEAR checklists were used for the review. To these were added grey literature (including conference proceedings, government reports and policy documents) for the review in this segment. Figure 9, below, shows the PRISMA flow diagram of articles used for the review.

Figure 9: PRISMA diagram on gender equality in health at work.



Findings from the review are presented under the following headings/subheadings: (a) sex and gender, (b) equity and/or equality in health, and (c) gender and health at work.

3.2.1 Sex and gender

This section presents findings for an aspect of the following literature review question:

> Are there any implication for gender equality in health at work?

Sex and gender are key concepts of this study, especially when answering the second research question (section 1.4). So, effort was made to present a fundamental understanding of these concepts from the review literature, and this is presented in the following paragraphs.

Variations exist in the socially defined differences between female and male, determined by biological composition, work and responsibilities outside work. For instance, the WHO (2010d) explained sex in the biological context as the classification of living things into male or female in accordance with their reproductive organs or functions (assigned by the chromosomal complement). However, gender was defined as the socially constructed norms, behaviours, roles, attributes and activities that a particular society considers suitable for men and women. Similarly, Wizemann and Pardue (2001) presented gender as a person's self-representation as male or female, or how that person is responded to by social institutions. Earlier, and similarly, the WHO (2002b) referred to gender as how individuals are perceived and expected to think or act as either a woman or a man (because of the way society is organised, not necessarily because of our biological differences).

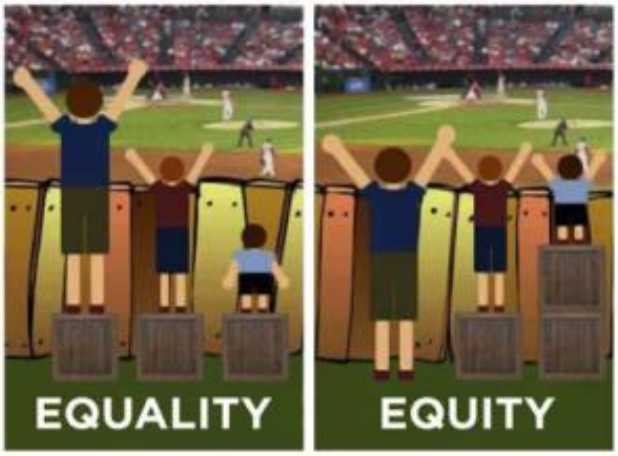
3.2.2 Defining gender equality and/or equity in health matters

The second research question in section 1.4 addressed the issue of gender equality and health at work. This section presents findings on an aspect of the literature review question (section 2.1.1.1) and provides the basis for the concept of equity/equality on health.The details are highlighted below.

The attainment of optimal health (including social, physical and mental wellbeing) is a fundamental human right (irrespective of the nature of the protected characteristics an individual may possess), recognised through many regional, national and international declarations and charters (e.g., Law of the Federation of Nigeria 1990; Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) 1992; Equality Act 2010; Brouwers 2014). The concept of equity is regarded as an ethical principle. Often, the terms equity and equality are used synonymously but they are not strictly the same (see picture 1, below). Although equity and equality are different, the latter becomes indispensable in the operationalisation and measurement of health equity (Braveman and Gruskin 2003). These authors noted the limited agreement on definition of health inequality or health equity. Similarly, different people or groups of individuals give their own interpretations of these two concepts within their settings (contextualising the concepts). Also, health disparities are defined to include differences in the incidence, prevalence, mortality and burden of diseases and

other adverse health conditions (National Institutes of Health 2004) among the diverse groups in a setting. Picture 1 (below) simply highlights the difference between equality and equity.

Picture 1: The difference between equality and equity.



Source: Interaction Institute (2016)

Earlier, equity in health was referred to as fair opportunity for all individuals to attain their full health potential without constraints or denial (Whitehead 1990). Similarly, the WHO (2010d) outlined equity in health as the absence of socially unjust and unfair health disparities. This definition is more subjective and relative, as it is not clearly measurable. Also, the WHO (2002b) reported it as the absence of discrimination in relation to opportunities, and allocation of health benefits or resources (including access to services for women and men). Braveman and Gruskin (2003) explained health inequity as a situation whereby a particular social group like the poor, a minority, or a less privileged or a particular gender group have persistently experienced disadvantages in health. In other words, it connotes a situation whereby the 'less privileged' in a particular society is systematically experience worse health or are exposed to more hazardous health situations. Meanwhile, health inequalities include differences that exist in allocation of health resources between various groups, which may not necessarily be between the best- and worst-off groups.

Despite the available evidence and recognisable positive effects of practising gender equality in society, its wider application and engagement in sectoral affairs have mostly proved challenging due to a lack of sustained political commitment (Backhans et al. 2007). Mooney and Scott (2000) indicated that gender inequality and inequity remain a matter for concern to date. As a result, the authors recognised the need for gender mainstreaming in all affairs. Similarly, Brouwers (2014) warned of an increase in denial of fundamental human rights for women in sub-Saharan Africa and South Asia while organisations have failed to achieve gender equity in their affairs, including health matters. Additionally, the UK Department for International Development (2012) declared that Nigeria exhibits high and worrying levels of both inequality and inequity between men and women. Furthermore, Mensah et al. (2005) identified health disparities as a major public health concern and called for health disparity data for the purpose of assistance in policy and relevant programme development.

The WHO (2010d) noted that while gender equality has achieved significant progress in areas like education, the reverse is the case in health, and thus health inequalities between males and females persist in an appreciable number of societies today (including in workplaces). Although both sexes are faced with disparities, the majority affect females. This situation can be explained by the persistent social tradition between the two sexes whereby women are tasked with more physically demanding caring responsibilities than men, which negatively affects women, making them more prone to disease and early death (WHO 2004). However, the report noted that the negative cultural effects of work–family logistics not only affect females, but sometimes also affect males. In corroboration, the ILO (2009) noted that the concept of paternity leave is yet to be globally accepted among nations. This concept allows shared roles in situation where women are more engaged with work activities outside their homes. In particular, paternity leave enables fathers to discharge their duty of emotional support and discharge their caring roles as parents to their newborns. The reasons for limited adoption and implementation of paternity leave might have stemmed from a lack of or ineffective policies in organisations and nations. For instance, Brouwers (2014), in a 20-year evaluation study, noted that there was no study that reported effective policy on gender mainstreaming at the

establishments studied. Earlier, the ILO (2012) affirmed that no society has achieved gender equality, despite the existing legislation against sex discrimination. Similarly, the UN Women (2013) have reported that even the available opportunity for gender equality is collapsing following mainstreaming fatigue. Absent, ineffective or fading policy on gender mainstreaming becomes an issue of concern, especially with the increasing proportion of female workers in employment today, and a crossover of duties between males and females. In order to substantiate the negative consequences of practising gender inequity in organisations, Doyle et al. (2005) demonstrated that gender imbalance at work could have a number of health effects on the populace, locally and globally. This can prevent the under-represented gender group from accessing the necessary and basic resources required to support good health. Consequently, it may lead to negative and overwhelming health effects on the affected group.

Also, the EU-OSHA (2013) reported little improvement in job discrimination for females in some occupations. Job discrimination persists despite women's continued appointments in 'male-dominated' jobs globally (with few exceptions). This report noted that women's employment has continued to grow, as have gender health inequalities. For instance, women's employment has increased from 56.4% in 1971 to 70.1% in 2008 (Office for National Statistics (ONS) 2009). However, with the growth in women's employment rate, the need for work–life balance and gender health equalities at work have become important considerations. In particular, Smith and Tessaro (2009) and Cooke et al. (2009) have reported discrimination in the workplace regarding proactive health promotion and preventive measures across genders. Similarly, Elwer et al. (2013) reported gender differences in workplace health experiences. Also, Taiwo (2009) noted that the same task can lead to different health effects among men and women. As a result, there is a need for gender needs assessment in programme planning and policy review at work.

It is noteworthy that calling for equity at times involves a call to focus on women, who have traditionally been neglected, and a response to such calls may positively affect both sexes in the long run (WHO 2011a). For instance, the WHO report demonstrated that efforts made to reduce weight among mail carriers in England led to a reduction in incidence of musculoskeletal disorders among this

group of employees.

However, Eslava-Schmalbach et al. (2008) admitted that difficulties exist in determining health inequity among people. Hence, this challenges the objectivity or accuracy of measures in determining health inequity among diverse groups (including men and women) within society.

In summary, the reviewed literature demonstrated the need to consider a gender-based approach (GBA) to all programmes at work, including policies and practices (WHO 2011a). Hence, Archibong et al. (2006) demanded suitable intervention plus far-reaching sensitisation programmes to address gender inequity (Archibong and Sharps 2011) in various settings (including the workplace). This will ensure equity of opportunity and outcome for both sexes in all affairs (including health) and in all places (and at work). Moreover, it will systematically integrate gender perspectives in the design, implementation, monitoring and evaluation of programmes, policies and practices (Health Canada 2003) in all affairs.

3.2.3 Gender and health at work

This section presents an aspect of findings from the literature review question (section 2.1.1.1) that asks:

Are there any implication of gender equality on health at work?

Messing et al. (2006) identified a gap in knowledge regarding gender and health at work, as very few countries record illnesses based on gender. In corroboration, aside from records for sickness absence, which were separated for the sexes, the available records of illnesses at the organisations studied were non-gender-specific. This makes it difficult to track gender differences in health outcomes. Furthermore, Messing emphasised the negative implications of this situation in determining work-related health outcomes by gender categories. In support, the ILO (2009) affirmed that previous research on occupational health and safety focused largely on the impact of risky jobs on employees, which mostly affected men and not women. Also, there is a need for more research on the effects of different jobs – low, medium or severe risk–on both men and women. The inequalities of reports regarding the potential hazards of work for

women, compared to the male workforce, were acknowledged (Davis et al. 1998). However, Messing noted limitations to the information on health outcomes of certain jobs for men. As a result, there is a lack of comprehensive information regarding associated health effects of jobs on men and women. Hence, more research is required to determine the health effects of appreciable number of work categories undertaken by men and women, which are currently missing from the literature.

So far, the available literature demonstrated the vital role of social responsibility in determining the work–health effects and experiences of both sexes. For instance, Blau et al. (2002) identified factors outside the workplace capable of influencing employees' health or reactions to work. For example, in his study Blau reported that female employees were engaged in more domestic work than males (20.8 vs 7.8hrs/week respectively). Such commitments among females included cleaning, childcare, elder care, cooking and laundry. Generally and among males, outside work responsibilities included home and car maintenance (Statistics Canada 2002). This showed a greater workload for working women than men and potential differences in health outcomes of the sexes from work–family interaction. Murphy (2000), in a bid to identify the possible causes of greater health challenges among women, concluded that the double workload (employment and child-rearing or caring for other vulnerable family member) makes women more disease-prone. Women thus have the potential to exhibit more negative health effects from work. The United States Department of Labour (2002) stated that women constitute 46% of the paid labour force and are responsible for 81% of health claims (meaning there are more sickness reports from women than men), which amounts to a third of occupational health and safety claims (McDiarmid and Gucer 2001). Hence, programmes and work schedules (flexible) that allow harmonisation of these roles could support and promote the health of females inside and outside the workplace. Lippel (2000) and Langerlof and Menkel (2001) observed that workplace health preventive activities/care sometimes treat men and women differently in a manner that lead to inadequate attention to gender needs at work. Hence, Messing et al. (2006) affirmed the need for specific and necessary attention to health needs of both sexes at work. As a result, they recommended that occupational health

researchers reflect a gender-based record of health matters among employees. This will help professionals to identify risks peculiar to males or females. Messing admitted that circumstances make gender-sensitive practice impracticable. However, where it occurs, there are lots of benefits, including better data/research quality enhancement. Also, it allows for more useful and results-oriented preventive programmes for the workforce. Similarly, Health Canada (2002) noted that gender-sensitive or gender-based analysis allows health indicators to be connoted specifically in the male and female context, thus, promotes better future health planning and implementation. Wizemann and Pardue (2001) explained that the difference in biological compositions including endocrine functions, fat, immune system, CVD system, metabolism, and bone causes the different reactions to workplace health hazards between males and females. This corroborates the need to separate the record of health data for men and women at work. Gender Impact Assessment (2010) reported the difficulties that can result from treating everyone the same in terms of risk exposure at work. These have led to various adverse health effects. In particular, women were found to be in a more disadvantaged position than men (WHO 2011a) with such arrangement.

Differences exist among males and females at work in the duration of sickness absence, with proposed potential causes for these disparities. For example, Islam et al. (2001) have shown that women have longer sick leave/absences on average than their male counterparts. Possible reasons adduced included the greater involvement of women than men in domestic responsibilities (which weakens their immune system). However, Messing et al. (2006) have argued that males' going back more quickly to work than females might stem from the pressure to go back (men are the breadwinners in an appreciable number of countries). Furthermore, the Central Statistics Office (2003) reported that the cause of longer sickness absence in females may be the gender pay difference, predisposing this category of employees to more health crises than men (women are more involved in blue-collar jobs and less represented in white-collar jobs). As a result, women are required to work more in order to gain commensurable pay (associated with white-collar jobs), leading to more strain on their health and wellbeing compared with their male counterparts.

Similarly, the EU-OSHA (2003), in their commissioned research, noted the areas of concern in workplace inequality as (a) male–female discrimination, (b) workplace harassment and bullying, (c) limited occupations and career opportunities, including limited managerial positions, and (d) non-flexible working times. Hence, Doi and Minowa (2003) have shown the need for continued efforts to improve the health and safety of both sexes at work. Specifically, it was noted in their research an underestimation of health and safety risks for women compared with men. Thus, there exists an imbalanced approach to health issues regarding gender at work. Similarly, Savikko et al. (2008) had reported a higher percentage of physical and mental health risks among women in male-dominated workplaces and the reverse was the case in female-dominated workplaces. Also, a Swedish study conducted by Sorlin et al. (2011) concluded that organisations with smaller gender pay gaps have similar sickness absence rates for both sexes. Additionally, the WHO (2011a) noted that workplace health promotion programmes that take account of sex and gender do lead to better health and wellbeing among employees. Furthermore, the European Agency for Safety and Health at Work (2013) indicated that the UK and Sweden reported better health status in organisations with well-integrated gender diversity. With these developments, understanding occupational health and safety issues for working women and men is important to the understanding of the general occupational health issues.

In summarising this third segment of the literature review, it is noted that the European Agency for Safety and Health at Work (2013) identified the need to incorporate gender mainstreaming into occupational health and safety approaches at work. The literature gave reasons for the disparity and inequality in the workplace, including the under-representation of women at the policymaking and decision-making level of organisations. Also, most previous research on OHS had focused on men compared to women. This prevents the reflection of women's experiences, knowledge and skills when policies are formulated at managerial decision-making levels. Thus, Braveman and Gruskin (2003) admitted that equalising opportunities for health at work (meeting gender health needs in the workplace) leads to addressing the most important social and economic determinants of health and development. In support, the EU-

OSHA (2003), Braveman and Gruskin (2003) and the European Agency for Safety and Health at Work (2013) have shown the need to adopt a comprehensive and holistic approach to occupational health and safety issues, with due regard and consideration for diversity. Consequently, the studies reviewed indicated the need to conduct a gender-based approach in all programme planning and policy formulation at work. Finally, for the purpose of this study, equality and equity were taken and utilised interchangeably.

3.3 Segment three of the literature review: defining and highlighting the impact of a healthy workplace on employees and organisations

The research aimed to examine the contributions of a healthy workplace to the achievement of MDGs 3 and 6. This section reviews literature that reports the effects of HWs on employees and employers (organisations). This served as the foundation for determining an organisation's contribution to attainment of the MDGs. This literature review question asks:

Does a healthy workplace impact on employees and organisations?

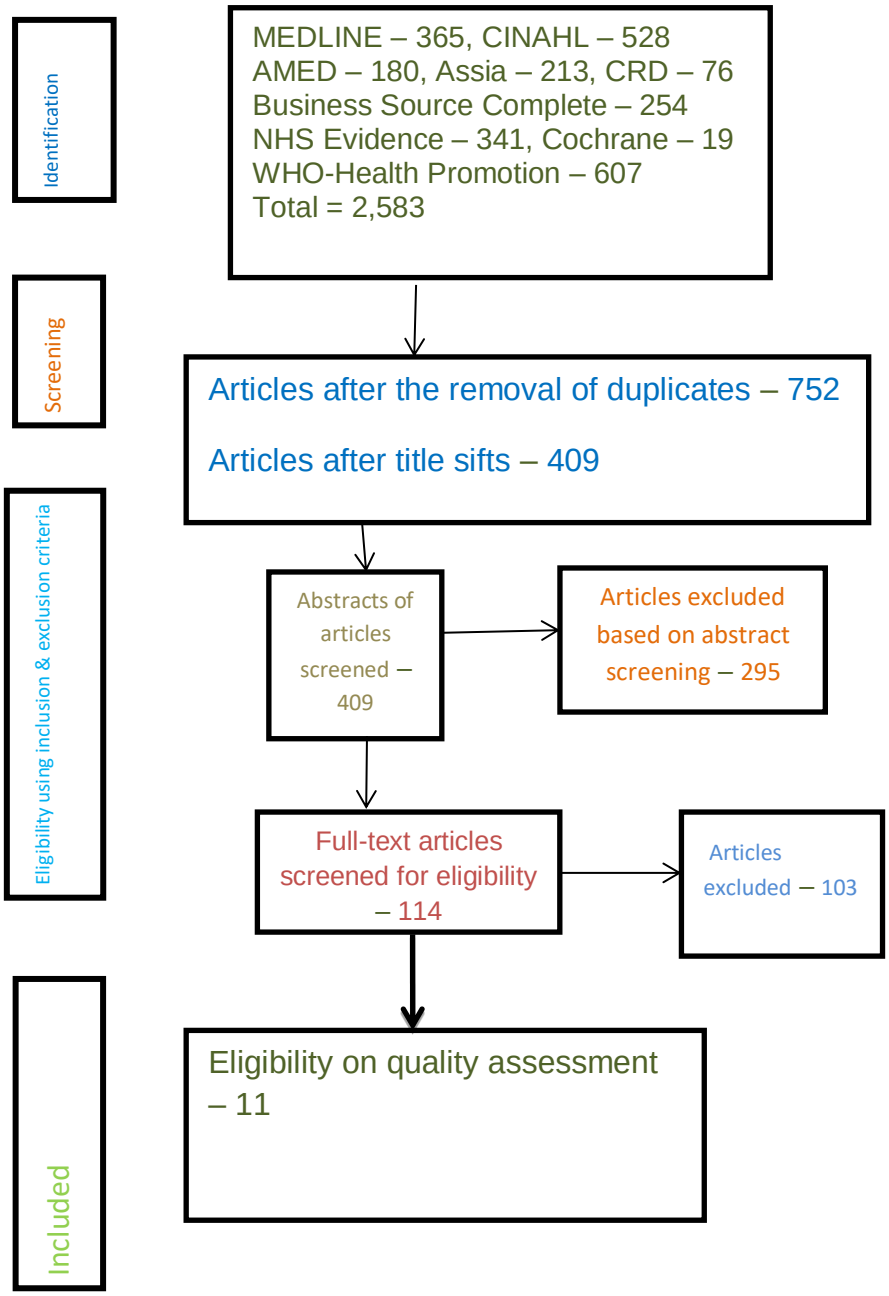
A systematic approach to the literature review was adopted to identify and screen articles using inclusion and exclusion criteria. This approach led to the final selection of literature utilised for the review. Section 2.1.1 outlined details of the process for each of the three literature segments. The preliminary search for articles brought up a total of 2,583; this was followed by removal of duplicates, leaving 752. A title sift of these articles left 409 papers, of which 295 articles were excluded following screening of abstracts. The remaining 114 full-text articles were reviewed, leading to the exclusion of 103 articles. Altogether, 11 articles met the eligibility criteria and were used for the review. Items of grey literature, including conference proceedings, government reports and policy documents, were included in this review.

Findings from the review are presented under the following headings/subheadings:

a. Principles of a healthy workplace
b. Work environment and employees' health
c. Workplace and Sickness absence records

Below is the PRISMA flow diagram for the literature review on the impact of a healthy workplace on employees and organisations.

Figure 10: PRISMA flow diagram on the impact of a healthy workplace on employees and organisations.



3.3.1 Principles of a healthy workplace

A healthy workplace is one of the key concepts of this research title. An effort is thus made to present different opinions about the concept and its principles, derived from relevant literature.

Different opinions exist among scholars about HWs. The WHO (2003) explained it as an organisation that advocates for a holistic plan in promoting the health of the workforce through collaborative efforts of stakeholders to persistently work for a common goal of health and wellbeing.

Also, in a Swedish study by Arwedson et al. (2007), a healthy workplace was outlined by responding employees using four strategic qualities: good working environment, physical fitness and a supportive work environment, effective and functional leadership, and conscious efforts by employees in taking responsibility for their own health. Lowe et al. (2003) had also described a healthy workplace as one where employees enjoy good social and communication support. Evidence exists of the negative effects of poor communication, conflicts, poorly delegated tasks and job insecurity on employees' physical and mental health (Olafsdottir 2004). This has led to 'unhealthy' situations at work. Furthermore, Lowe (2004) highlighted a healthy workplace as one whose culture, climate and practices create an enabling environment for improved health and safety among employees. Additionally, Lowe noted that employees should be valued as the most important assets in a healthy workplace. Other healthy workplace qualities include supportive supervisors who involve employees in decision-making processes, good communication and job control, and equal opportunities to learn and train in the workplace. Finally, Lowe et al. (2003) acknowledged that a healthy workplace gives priority to work–life balance and individual wellness. Such places organise relevant and needs-based workplace health promotion programmes.

ACAS (2012) identified six healthy workplace indicators: (a) a flexible and well-designed job, (b) employees feeling valued and involved in the organisation, (c) employers/managers using relevant health services (e.g. occupational health services) to resolve sickness absence, (d) line managers being trained to develop good interpersonal relationships, (e) workplace managers supporting the return

to work (from sick absences) through relevant discussion with the employees concerned, and (f) managers that have basic knowledge of managing common health problems at work (first aid).

Lowe (2004) further identified eight guiding principles of a healthy workplace: (a) a supportive culture and values, where employees experience a high level of trust and support from colleagues and supervisors, (b) specifically, leadership by example, visibly demonstrating health and safety commitments to subordinate employees, (c) considering and defining health from a broader perspective and not restricting it to the absence of physical health or injuries, (d) a participative team approach with direct involvement of employees and other stakeholders in the organisation, (e) a customised plan, collaboratively developing a health and safety policy with clear goals and lines of responsibility, tailored to the organisation's core business, vision, workforce characteristics and work environment; this is to be reviewed regularly or when considered necessary, (f) workplace health issues and outcomes; this involves having a direct and clear link to the strategic goal of an organisation, and overall, management takes health into account in the decision-making process, (g) constant and sustainable support for health; essentially, there is a need for a structured and adequate resources to ensure continuity and improvement for health at work, and these include the necessary training of managers and other employees (as the need arises) with a view to including health in the organisation's function, and (h) communication and evaluation: this deals with open communication regarding the effects and achievement of adding and sustaining health at the core of the organisation's function, thus allowing for review, commendation and improvement where necessary. These guiding principles were identified as strategies for employers to achieve a sustainable healthy workplace. Figure 11 summarises these guiding principles.

3.3.2 Work environment and employees' health

This section presents additional findings from one of the three literature review questions:

Does a healthy workplace impact on employees and organisations?

A ‘healthy work environment’ is a prerequisite to a ‘healthy workforce’, and fundamental to the future economic and social wellbeing of a nation (Zungu et al. 2007). ACAS (2012) affirmed that healthy workers go the extra mile, have limited sickness absence, are more committed and creative in their jobs and provide very good customer services. Chu et al. (2000) noted that a ‘healthy workplace’ has occupational health services or at least an HSE department responsible for coordination of preventive/proactive health initiatives at work with a view to achieving a ‘healthy workforce’.

Conversely, an unhealthy work environment is associated with poor management, high levels of sickness absence, decreased productivity, poor customer satisfaction, an unreasonable level of work demand, a bullying culture and poor job commitment by employees (ACAS 2012). These circumstances produce an unhealthy workforce. The ACAS report noted that many employers have recognised the adverse effects of poor health on workers leading to unwarranted health and safety issues, decreased performance and poor morale among the workforce. Also, the report shows that the higher the level of control in the work environment, the better the level of employees’ health.

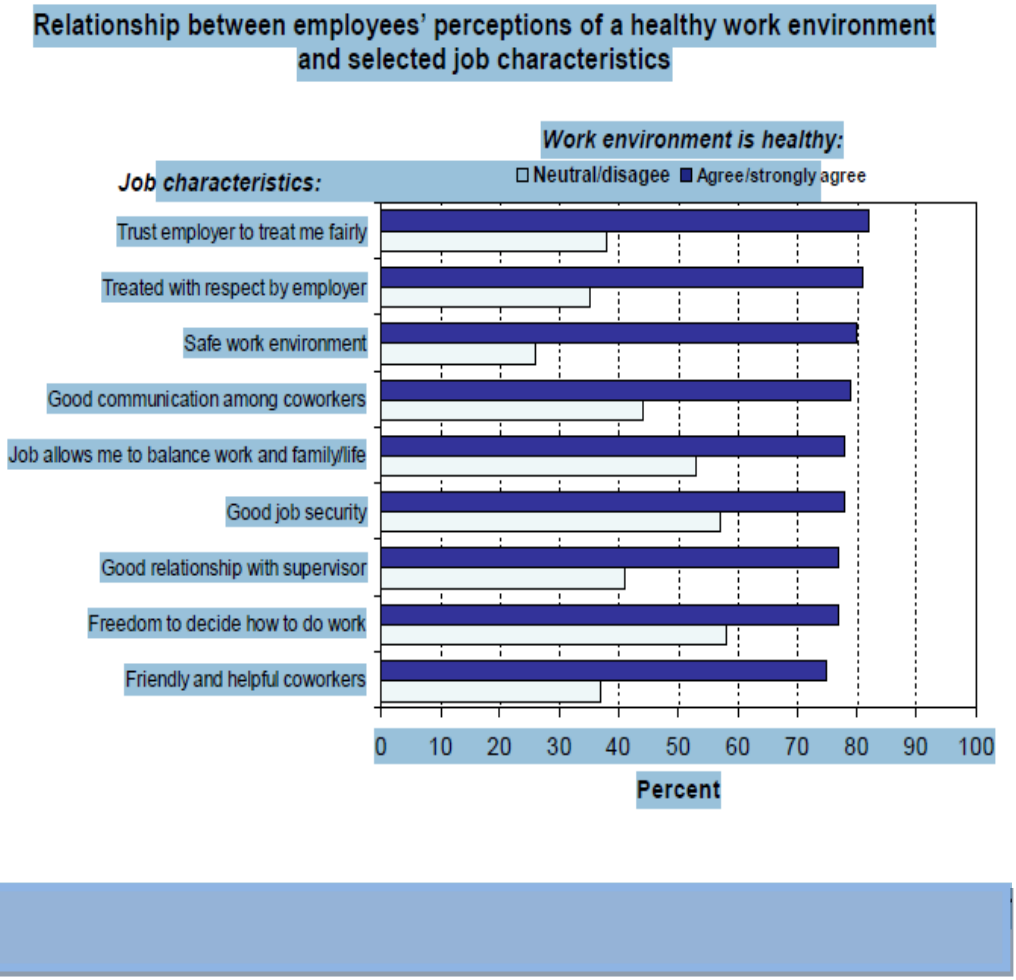
Hence, one of the most important factor in improving health, wellbeing and performance among employees is improvement of the work environment (Lowe 2004). So, evidence abounds that an organisation that promotes and protects the health of its workers (e.g., by ensuring a healthy work environment) in the long run has a competitive advantage and is most successful (Zungu and Setswe 2007; WHO 2010b). Hence, there is a need for conscious efforts by organisations to ensure a healthy work environment with a view to achieving optimal health among employees. This is because they are the most important contributors to the nation’s and world economic / social development (WHO 2007). So, in today’s business context, companies are assessed not only on their financial worth but also on how well they ensure the health and wellbeing of their intellectual capital (Olafsdottir 2004).

Furthermore, a report has shown that promoting and sustaining a healthy work environment relies not only on being nice to each other at work, but also on having effective policies to manage potential social issues at work. However, some

scholars have reiterated the need for collaborative efforts between employees and employers to ensure and sustain a healthy work environment (Kelloway and Day 2005).

Earlier studies have identified enabling workplace structures as key indicators of a healthy workplace (Zaza et al. 2000; US Preventive Services Task Force 2007). These structures, when made available, contribute significantly to the achievement of a healthy work environment (for the benefit of employees and employers). Such arrangements and efforts include availability of a canteen or cafeteria where various choices of healthy meals are accessible and served at reasonably affordable prices, provision of and access to gym facilities at work, the policies necessary to address contemporary workplace health needs or situations, and WHPPs delivered at no cost to employees.

Figure 11: Relationship between employees' perceptions of a healthy work environment and selected job characteristics.



Source: Lowe 2004

Finally, any strategy aimed at ensuring a healthy work environment must include conscious efforts to prevent disease. This can be achieved mainly through proactive and preventive health programmes at work, including planning and implementing effective and relevant WHPPs.

3.3.3 Workplace and sickness absence records

This section presents findings on the relationship between workplaces and sickness absence derived from one of the three literature review questions (section 2.1.1.1):

Does a healthy workplace impact on employees and organisations?

Analysis of the literature has shown that poor and unhealthy work environments contribute to high rates of sickness absence among employees. Kremer and Steenbeek (2010) found that 15% of employees' sickness absences would not

have been required (or would at least have been shorter), had their work environment been healthier. Also, studies have demonstrated the negative effects of increased sickness absence among employees in organisations. This has led to far-reaching effects on employers and employees. The negative effects on employers include reduced productivity, high staff turnover, poor public image and loss of or instability in market control in such organisations. Such effects on employees include sick absence and poor financial status on affected employees and the family. Conversely, the documented effects of HWs include lower absenteeism and turnover, improved job performance, reduced health benefits and worker compensation, lower accident rates, and improved job satisfaction and staff morale (Lowe 2004).

In summary, segment three of the literature review demonstrated two key concepts necessary for the achievement of a sustainable healthy workplace. These are: (i) protection and (ii) promotion of health at work. The key structural requirement to achieve these (sustainable healthy workplace) is the provision of effective occupational health services at work (the primary function of which revolves around them (details highlighted in section 3.5).

3.4 Linking and summarising the three literature review segments

Chapter two focused on one of the literature review segments and presented findings in two parts. The first discussed the implication of work on employees' health and vice versa. The second section highlighted the various strategies to prevent or eradicate diseases among the workers with a view to improving workers' health and achieving maximal productivity (such strategies include planning and implementing regular, relevant and cost-effective WHPPs). The second literature review segment (discussed in this chapter), focused on gender and health issues at work. The last segment focused on the impact of a healthy workplace on employees and the organisation. A health-promoting workplace utilises comprehensive and robust methods or interventions to promote employees' health. Thus, it assists in controlling and combating disease at work. Eventually, this has the capacity to improve productivity and ensures sustainability.

From the review, it shows that efforts to prevent and combat disease at work

had a positive impact on stakeholders. The second literature review section showed the need to adopt a comprehensive and holistic approach to occupational health and safety issues with due regard to gender diversity at work (Braveman and Gruskin 2003; EU-OSHA 2003; EU-OSHA 2013). In terms of differentiating between equity and equality: equality seems more objective and measurable than equity but equity is more subjective, thus allowing for varied interpretations. The literature review concluded that equity in health simply means equal opportunity (the definition adopted in this study). Specifically, it means resources are distributed and channelled in a manner that is most likely to equalise the health outcomes of the disadvantaged and the advantaged social groups within a setting. Also, understanding of gender in relation to health experiences and behaviour is crucial in planning and implementing workplace health promotion programmes (Ostlin et al. 2006), and thus it is crucial in the attainment of the MDGs. Haile (2012) demonstrated the need for more rigorous research on associations between gender and employees' health outcomes. This is with a view to establishing workplace standards and best practice in this regard. An available report (WHO 2011a) noted that workplace health promotion programmes that take account of gender needs have led to better health and wellbeing of employees. Also, it was noted that any effort made to equalise opportunities for health in the workplace (Braveman and Gruskin 2003) helps to achieve the most important social and economic determinants of health. As a result, equalising opportunities at work had a positive impact in addressing MDG 3 of this study.

3.5 Roles of occupational health and safety services in relation to the corporate social responsibilities of an organisation

Occupational health services have been identified as a good indicator of HWs. The activities of this division/department in an organisation are mainly health promotion and disease prevention. So, the division is in charge of health and wellbeing at work. Therefore, it assists employers in meeting their corporate social responsibilities. Consequently, such divisions have helped employers in identifying and complying with global development programmes including the

MDGs and the ‘Global Goals’ – SDGs. So, this section relates to the two research questions in section 1.4 because the ability to achieve the two relevant MDGs (3 and 6) of this study is more feasible in organisations with basic structure - occupational health services.

The WHO (1994) considers occupational health and safety services as a field that deals with the promotion and maintenance of the highest degree of physical, mental and social wellbeing of workers in all occupations. In accordance with occupational health objectives, as explained by Stranks (2003), it is essentially a proactive health service designed for the workforce. It monitors the interplay between employees’ health and work. Gale (2003) highlighted occupational health services as strategies by employers to reduce cost and improve employees’ health and wellbeing. Gale noted that these strategies include wellness programmes, disability management, return-to-work planning, management of chronic ailments, and recovery. A more comprehensive perception of occupational health sees it as a scientific field that anticipates, recognises and evaluates situations (hazards) in the workplace that could negatively affect employees’ health and wellbeing and the surrounding community (ILO 2009). Amponsah-Tawiah (2013) explained it simply as a holistic approach targeted at the realisation of employees’ wellbeing at work. Hence, the author identified prevention as a concept fundamental to occupational health practice.

Montero et al. (2009) affirmed the two main corporate social responsibilities of employers. These are institution of good occupational health, and prevention of risks. The authors concluded by explaining that occupational health services address the physical, mental and social wellbeing of employees. Making risk prevention a separate corporate social responsibility duty in these authors’ work emphasised the significance of identifying potential risks at work, their prevention, and management of such identified risks in the workplace. Otherwise, these functions are all embedded in core functions of occupational health (and safety service). Consequently, OHS is recognised as a fundamental and central function of the corporate social responsibility of an organisation.

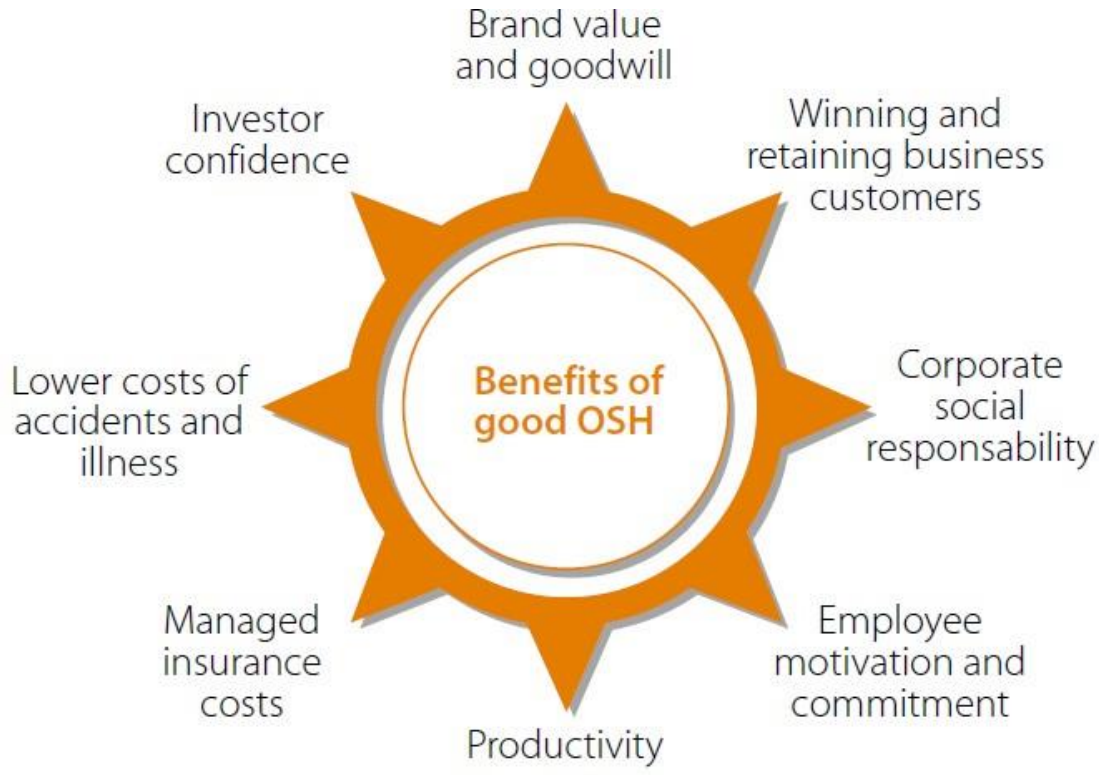
The advantages of instituting health at work through occupational health

programmes include better corporate image, improved productivity, reduced accidents, illnesses and litigation, and help organisations to meet international policies and standards (including the MDGs and the SDGs). Conversely, poor or absent attention to health and safety measures at work results in increased sickness absence by employees (among other disadvantages). This leads to the loss of millions of valuable work hours (HSE 2013). Hence, the involvement of occupational health services is a crucial driving force of business among organisations (OSHA 2012). It gives its users a competitive advantage in the global market. Also, central to the EU's commitment is the need to give equal significance to increased productivity and employment through greater competitiveness. Employers can only achieve these by taking good care of the health, and wellbeing of their most valued asset – the employees. This is what OHS stands to achieve. Despite these advantages, globally, OHS is still underutilised, and few organisations deploy its services. Essentially, the core responsibilities of occupational health services are as follows:

- the promotion and maintenance of the highest degree of physical, mental and social wellbeing of workers
- the prevention of departures from health caused by working conditions
- the protection of workers from risks
- the adaptation of the working environment to the physiological and psychological capabilities of workers.

Finally, the literature has acknowledged OHS as proactive in its approach to health and wellbeing at work. Thus, its activities assist in preventing ill health and harm to the workforce. In view of this, the service is being integrated into the wider business model with a view to achieving improved organisational value/image and as proof of corporate social responsibility (CSR), thereby helping organisations to meet global development plans (MDGs and SDGs). Additionally, it allows for a high level of confidence by investors and positively engages stakeholders. The figure below summarises the relevance of OHS to an organisation.

Figure 12: The relevance of occupational health and safety services to organisations.



Source: OSHA (2012)

3.6 Relevance of the occupational health and safety field to the Millennium Development and Sustainable Development Goals

This section is related to the research aim (section 1.3) that determines the contributions of organisations to the attainment of MDGs 3 and 6.

The need to promote and maintain the highest degree of physical, mental and social wellbeing of workers at work has been well documented in the literature (Paoli 2001; Waddell and Burton 2006). Combating disease is the sixth of the eight MDGs, and promoting health and wellbeing is the third of 17 Sustainable Development Goals. Preventing and combating disease among employees is the primary role of occupational health services. Also, the essence of the profession is to improve the health and wellbeing of the workforce. Employees make up half of the world's population and are the most important contributors

to its economic and social development (WHO 2007). It is documented that the healthiest and safest organisations are the best in terms of economic competitiveness (Porter et al. 2002), which is what OHS services stand to achieve. Economic competitiveness fosters social development, and one of the key goals of the global development programmes (MDG 6 and SDG 3) is to promote health and wellbeing at work.

3.7 Regulations and occupational health practices in relations to the MDGs

This section is applicable to the research title and aim because it establishes the importance of policies, standards and regulations to the sustainability of a healthy workplace and the realisation of the MDGs.

Provision of and compliance with relevant health, wellbeing and safety regulations have a direct link with development goals including the MDGs and SDGs. Generally, these goals are directed at preventing and combating CD and NCDs (MDGs 6) and promoting health and wellbeing (SDG 3). Other details are outlined in the subsequent paragraphs of this section.

First, it is vital to note that variations exist across nations in the legal responsibilities of employers at work. These include moral, ethical, legal and corporate social responsibilities. Internationally, the WHO (1994) declared 'occupational health for all' following exigencies and rapid changes affecting the health, wellbeing and safety of employees and the environment.

Also, employers are required by the Occupational Safety and Health Act (OSHA 2012) to adapt workers to their job in a manner that is non-compromising to the health and wellbeing of an individual. Additionally, the European Agency for Safety and Health at Work (EU-OSHA 2013) recognised the HWS of employees as a legal and corporate social responsibility (and thus an ethical and social function of an employer). Ensuring compliance with these guidelines not only prevents litigation for an organisation but also add additional value of improving the health of the workforce, and sustaining it at an optimal level (WHO 2012).

Developed countries such as the UK have more stringent health and safety regulations than developing countries such as Nigeria (Adeogun and Okafor

2013). In the UK, the Health and Safety at Work Act (HASWA) 1974 is widely utilised by workplaces. This sets overall standards regarding health, safety and welfare for employers. The HASWA 1974 requires that employers take reasonable care to ensure the health, safety and welfare of their employees. Specifically, It requires the employers to ensure “as reasonably practicable” a safe place of work and working environment. Also, the Act requires that staff are given information, instruction and training on matters of health and safety, and equally have responsible (among other requirements).

Aside from this, there are other regulations such as the Management of Health and Safety at Work Regulations 1999. The requirement of the employer regarding these regulations is summarised below:

- Conduct and assess the risk to all the relevant stakeholders at work. These include the employees, customers, partners and any other person who could be affected by the organisation’s activity.
- Have a written health, safety and environment (HSE) policy where there are more than five employees.
- Arrange for effective planning, organisation, control, monitoring and review of preventive and protective measures at their workplace.
- Ensure employees have access to competent health and safety advice.
- Consult employees about risks at their workplaces, and the current preventive and protective measures.

The punishment for non-compliance to these Regulations/Legislations may be a fine, imprisonment or the revoking of a professional or organisational licence (HSE 2013). However, in Nigeria, occupational health and safety are at a lower development stage (Adeogun and Okafor 2013). As a result, only very few private and governmental institutions have HSE policies and render occupational health services. This has overwhelming implications for stakeholders at work, especially considering the information that Africans (including Nigerians) are seriously affected by a variety of CDs and NCDs (WHO 2005a). Thus, this situation requires a determined action by all stakeholders (including the private and public sectors), to overcome the disease burden at

work. Adoption of the MDGs guidelines offered opportunities for a country like Nigeria to address these diseases (combat malaria and 'other diseases'). This required the participatory efforts of the Nigerian communities (including workplaces) through formulation or domestication of relevant policies, standards and regulations.

It is useful to note that the enactment of the Factories Ordinance 1955, based largely on the British Factories Act of 1937, introduced occupational health and safety legislation in Nigeria (Adeniran 2013). Several amendments were made, with the last carried out in 1987 and 1990. The legislation was then referred to as the Factories (Amendment) Decree 1987 and the Factories Act 1990 (Chapter 126, Volume VIII of the Laws of the Federation of Nigeria). The Factories Act 1990 (similar to the HSWA 1974), makes general and special provisions. It aims to ensure the health, safety and welfare of persons employed in places statutorily defined as 'factories' and for which the law requires a certificate of registration. The provisions (as contained in parts ii–vi) include cleanliness, ventilation, sanitary convenience and lighting, among others. These are part of the Nigerian government's efforts (through these Legislations) to prevent disease and promote health at work.

Other relevant Nigerian health, safety and wellbeing provisions include (a) the Public Health Act 1990, to be enforced by the Federal Ministry of Health, (b) the Federal Environment Protection Agency Decree No. 58 of 1988, (c) National Environmental Protection (Effluent Limitations) Regulation 1990, and (d) National Environmental Waste Regulation 1991.

Despite the availability of these pieces of legislations, there have been significant challenges with their enforcement (Umeokafor et al. 2014) in Nigeria. Hence, there is a need for a review of existing and adoption of more relevant international health, wellbeing and safety regulations and best practice with a view to improving enforcement of these regulations.

Essentially, this section presented the relevant regulations and best practices concerning health, wellbeing and safety in Nigeria. The Factories Act 1990, parts ii–vi of the Nigerian's Constitution, remains the main occupational health law applicable to most organisations in the country. This was designed to be

enforced by the Factory Inspectorate division in the Ministry of Labour and Productivity. However, the division, under this provision, has the legal right to delegate the responsibility to other relevant authority, when and if considered necessary.

3.8 Summary

This chapter reviewed the up-to-date, available literature related to the second research question on gender health equality at work (section 1.4). Moreover, the chapter highlighted the effect of a healthy workplace on employees and the employer. The association and linkage between sections 2.2 (see chapter two), 3.2 and 3.3 (this chapter) were explored and discussed. For the purpose of this review, the articles excluded were studies conducted at educational and financial institutions, and studies that focused on health care providers, mental health or psychological issues. Included were research studies from corporate institutions such as oil and gas companies, port services, manufacturing companies and other corporate organisations.

3.9 Conclusion

Two of the three main literature review segments were presented in this chapter. These examined modalities for implementing equality in health at work and discussed the impact of a healthy workplace on employees/organisations. The approach to the review was the same as in the preceding chapter (section 2.1 presented the details).

Next is part three - chapter four, which will discuss the methodological approach and methods deployed in this study.

PART THREE: METHODOLOGICAL DESIGN AND METHODS

CHAPTER FOUR

METHODOLOGY

4.1 Introduction

This chapter establishes the particular methodology adopted for this study, which is a qualitative, eclectic case study. Thus, it assisted in realising the research aim (section 1.3) and answering the research questions (section 1.4) by specifying the methodological approach used for the study.

4.2 Highlights of the methodology

Creswell (2003) identified four important methodological areas a researcher needs to address:

(a) the philosophical stance or the theoretical perspectives behind a research methodology (e.g., pragmatism, positivism, constructivism, critical theory or interpretivism) – For instance, this study adopts pragmatism

(b) the epistemology of the study, entrenched in the theoretical perspective of the given study (e.g., objectivism/subjectivism) – both objectivism and subjectivism were deployed in this study

(c) the methodological strategy (e.g., case study, ethnography, experimental research) – case study was adopted

(d) the methods of data collection (e.g., interview, survey, documentary analysis) – multiple methods (interviews and documentary analysis were used for the study).

Consequently, this chapter outlines the research philosophy, approach, strategy and methods deployed in this study. In line with the guidance provided by Creswell (2003), this study adopted a pragmatic theoretical perspective with both subjective and objective epistemologies. Additionally, case study was deployed as the research strategy in answering the research questions for this study. In support of the choice of this strategy, Crowe et al. (2011) recommended case study as an ideal research strategy for health-related studies (as in this study). Also, Thomas (2011) affirmed the extra quality of the strategy of enabling

comparison within and across cases or units of analysis, as required in this study. Thomas noted that the capability of comparison is achieved through its flexibility, allowing multiple data sources to be collected and deployed in answering the research questions (as was necessary for this study). As a result, these attributes make case study more robust than other research strategies such as phenomenology or ethnography. Also, Rowley (2002) noted that case study is relevant and useful for researchers interested in workplace-based projects and wanting to compare a limited number of organisations in their study (as was required in this study). Additionally, Dickson-Swift et al.(2014) utilised case study as a research strategy to examine factors that improve the health and wellbeing of employees at three Australian workplaces (which is similar to this study). Earlier, Vries (2004), in a meta-analysis of 62 case studies, reported that most of the qualitative studies used interview and documentary analysis as their research methods (as applicable to this research). This study examined how the case organisations have contributed to combating malaria and 'other diseases' at work. Additionally, it explored the consideration of a GBA in the preventive and reactive programmes organised in the workplaces studied. Thus, the study required the use of multiple data sources in answering these research questions. Consequently, a qualitative case study approach was adopted.

Furthermore, a case study research strategy was deployed in this study because the research questions fulfil the three criteria of the strategy (Yin 2003). First, they pose 'how' queries, as follows: (a) how has the studied organisation contributed to preventing/combating malaria and 'other diseases'? and (b) how has the organisation contributed to gender equality in health matters? Second, there was no control by the researcher over the variables and the phenomenon of study (as required by the strategy). Lastly, (c) this research focuses on a contemporary issue (required by case study research) – the contributions made by the participant, non-health, corporate, healthy organisations to the achievement of the MDGs. Ensuring gender equality in all affairs (including health matters) and preventing/combating malaria and 'other diseases' were considered to be among the global concerns and issues of modern times. Furthermore, the case study research strategy is noted to be suitable for heterogeneous sectors (Wedawatta et al. 2010), which was the situation with the two organisations studied. Moreover,

they were transnational industries with different and multiple departments performing various roles. Also, the research questions required a variety of data collection processes and data analysis methods. This is an important characteristic of case study research (Gerring 2007). Finally, the strategy was adopted as a result of its flexibility (Hyettet al. 2014), a vital characteristic in addressing the research questions (section 1.4) and in line with the philosophical stance of this study.

A healthy organisation, for the purpose of this study, is a non-health, corporate, transnational organisation with an OH or HSE division, which has been in existence for five years (minimum). The data collection methods included interviews, documentary analysis of relevant HR records, workplace service books, HSE policy documents, and occupational health/clinic attendance records. These data were collected in two phases. Phase one involved documentary analysis of relevant records (mentioned earlier). Phase two involved the use of semi-structured interviews to elicit information from participant employees. The elicited information included perceptions and experiences of employees about efforts made by their employers in preventing and combating diseases, and ensuring gender equality in health at work. Table 5, below, summarises the methodology of this study.

Table 5: The study Methodology

Paradigm	Ontology (What was the reality?)	Epistemology (How did I know the reality?)	Theoretical Perspective (Which approach did I use to know things?)	Methodology (How did I go about finding out?)	Research Strategy	Methods (Data source)
Pragmatism	Reality was constantly renegotiated, debated, interpreted in light of its usefulness in different new unpredictable situations	The best method was the one that answered my research questions	Deweyan pragmatism research through interaction design	Qualitative	Case study	Documentary analysis of the following: OH/clinic attendance records Employees' service books and HR records HSE policy documents Interview transcripts

Adapted from Creswell (2003)

In summary, the reviewed literature assisted in the choice of the appropriate methodology for this study. Essentially, in describing the methodology of this study, it can be referred to as an instrumental, descriptive, exploratory, multiple occupational health case study of two healthy organisations in Nigeria.

4.3 Pragmatism as applied to this study

Pragmatism offers an explanation for employing case study research as utilised in this study. Earlier, researchers adopted a case study research strategy and pragmatic philosophical stance (Luck, Jackson and Usher 2007; Yin 2009) in their studies. This stance looks at the 'how' or 'why' of the research question rather than asking a question regarding reality and the laws of nature (Creswell 2007). Hence, the stance allowed flexibility and deployment of multiple data sources (where necessary) to answer the research questions.

Regarding ontology, epistemology and methodological positions, pragmatism enables the fusion of the two conventional approaches (positivist and interpretivist). Additionally, pragmatism allowed collaborations and integration of research methods to answer the research questions in this study. It allowed a multi-method approach (for example, multiple methods of data collection and analysis), depending on what could best answer the research questions as engaged in this research.

Essentially, this stance posits that the truth or reality lies in its observable practical consequences rather than anything metaphysical. Whatever works is the truth or the reality. The latter is also observed to be in a continuous process of change. Hence, no one has or knows the final or ultimate truth. For Williams James (1842–1910), pragmatism was about value and morality. He explained that the purpose of philosophy is to understand the beliefs and ideas that add value, and why. Also, the pragmatist does not see the world as an absolute entity; thus, the researcher looked at various avenues (methods) of data collection to answer the research questions. These included subjective (e.g., interview transcripts) and objective data (e.g., recorded incidences of diseases or health risks).

So, in pragmatism, the key determinant of the research framework (epistemology, ontology and axiology) is the research question (Creswell 2007;

Saunders et al. 2009). This stance sees research philosophy as a continuum rather than as fixed or existing in opposing camps. In addition, it was noted that none of the subjectivists or objectivists could be mutually exclusive. Consequently, there is a need for a balance and a mixture of approaches – epistemology, ontology, and axiology – to properly understand the social phenomenon. In other words, what works best in answering the research questions is emphasised in a pragmatic stance. So, this study employed multiple methods, by gathering holistic and comprehensive data, typical of a case study research strategy. Flyvberg (2006) reiterated the need to use an approach based on suitability and the circumstances of the research problem. Hence, the case study strategy was implemented in this study, following the complex nature of the research questions.

To a pragmatist, truth does not exist in some abstract realm of thought independent of social interactions. The truth is, rather, a function of the active process of engagement with the world and verification. These assertions are well defined in the works of Charles Sanders Peirce (1839–1914). In particular, the paradigm posits that both qualitative (textual) and quantitative (numerical) data are preferred as they enable proper and better understanding of social reality (Johnson and Onwuegbuzie 2004). Pragmatism modifies the traditional dualist approach by preferring a balanced and common-sense versions of philosophical dualisms. The stance posits that there is more than one way to conceptualise the world and its content (pluralist view). This explains the choice of multiple methods for the data collection process in this study. It rejects the idea that the function of thought is to describe, mirror or represent reality. Thought is, rather, an outcome of the interaction between an organism and the environment. Generally, pragmatists assert that most philosophical ideas (topics) are best viewed based on their practical uses and successes. These include the nature of concepts, belief, language, meaning, science or knowledge. It is described as an instrumentalist and scientific anti-realist stance. It takes the view that a scientific concept or theory should be evaluated based on how effectively it is able to explain and predict phenomena. This is opposed to how accurately it describes objective reality.

Specifically, the pragmatic theory of design utilised in this study emanated from

Dewey's pragmatism, with three concepts that serve as building blocks: experience, interpretation and judgement. The concepts help to illuminate the intellectual capacity of interaction design that arises from practice, human interaction and experience. These theoretical concepts have been found to be useful, especially in circumstances where problems are poorly structured or disorganised, or extend beyond one section of life or knowledge (as applicable in this study). Hence, these are associated with uncertainty, uniqueness or instability and are able to resolve the research questions.

4.4 History of pragmatism

The early 20th century witnessed a reassessment of foundational questions by pragmatists regarding the process of knowing and the picture an individual makes about the world around us through knowledge and science (Encyclopaedia of Philosophy 2016). An earlier proponent of pragmatic philosophy and pragmatic theory of truth was Charles Sanders Peirce (1839–1914), who studied chemistry and philosophy at Harvard University. Charles applied logic and scientific principles to the philosophical method (Encyclopaedia of Philosophy 2016). The common features of this theory are reliance on pragmatic maxims (a set of principles) as steps to illuminating complex ideas or concepts, e.g., truth. The theory stresses the notion that knowledge, belief, truth and certainty are determined through inquiry. It is noteworthy that the pragmatist does not seek to replace past philosophical truths with current ones. Rather, pragmatism aims to examine the opportunity availed by both science and philosophy to provide understanding for individuals to discover meaning in their lives. The word pragmatism was first used to indicate a philosophical stance in the time of William James (1842–1910). James was referred to as the most inspirational and motivating American philosopher and constituted a link between Charles Sanders Peirce and John Dewey (1859–1952). James established pragmatic epistemology, which does not abstractly reflect the meaning of beliefs and ideas. Dewey is the final member of the classical pragmatists, a student at John Hopkins during Peirce's brief tenure. Also, Dewey deconstructed dualism and dichotomies. Dewey stressed the need for philosophers to give up the time-honoured distinctions between appearance and reality, theory and practice,

knowledge and action, fact and value. Doing this would enable philosophers to see the ill-posed problems of traditional epistemology and metaphysics. Dewey propagated a naturalistic approach, which considered knowledge to ascend from the dynamic alteration of humans to their surroundings. Dewey referred to pragmatism as instrumentalism and was at the University of Chicago with a fellow pragmatist, George Mead (1863–1931). Mead was best known as the originator of American pragmatism and a pioneer of symbolic interaction theory (which indicates that the meaning associated with the world around us is socially constructed and borne of daily social interaction). Ludwig Wittgenstein (1889–1951) was one of the most dominant pragmatic philosophers of the 20th century, working primarily in logic and philosophies of language, mathematics and the mind. Other pragmatic philosophers include Richard M. Rorty (1931–2007), who advocated for a unique type of American pragmatism (neo-pragmatism), whereby both philosophical and scientific methods form contingent expressions or words that individuals adopt or dismiss based on context or practicality. The latest among the pragmatists was Hans Joas, born in 1948, who promoted the need to rebuild American pragmatism and the social theory of action using the pragmatist notion of creativity. Essentially, Joas's pragmatism provides a unique resolution to the problem of value, and bonds the normative concerns of philosophy and sociological inquiry of norms. Mead's work provided the foundation for Joas's work and later drew mainly on James's concepts.

4.5 Ontology and epistemology

Creswell (2007) noted that qualitative researchers (interpretivists) consider 'reality' to be multidimensional, holistic and fluid, with an ever-changing ontological position. These researchers believe in the existence of multiple realities, which are subjectively (epistemological assumption) constructed in the mind (the world is socially constructed). Consequently, this stance usually adopts the inductive research approach. However, the quantitative researchers (positivists) see the world as conforming to laws of causation. Hence, it can be objectively tested. In this circumstance, the research approach is hypothetico-deductive and confirmatory. A research paradigm found between the positive and interpretive approaches is pragmatism (Tashakkori and Teddlie 2003; Creswell 2007). It is noted for its refusal to join in the 'paradigm war'. Vries

(2004) argued that case study research belongs to both positivist and interpretive paradigms. This explains its suitability as a research strategy for the pragmatic philosophical stance adopted for this study.

In summary, the research involved multiple data sources comprising documentary analysis of relevant human resources records, occupational health and clinic attendance records, plus interview transcripts. The study is an instrumental, descriptive, multiple, exploratory occupational health case study of two healthy organisations in Nigeria. The multiple data sources allowed both textual and numerical data to be simultaneously collected, analysed and brought together at the interpretation phase (Zohrabi 2013).

4.6 Justification of case study as the research strategy

Thomas (2011) observed that the case study strategy is increasingly utilised for health care studies.This is because the strategy enables the comparison of variables within and across cases or units of analysis (as required in this study). The case study is flexible and thus allows multiple data sources in answering the research question. These attributes make the case study more robust than other research strategies (such as phenomenology or ethnography) for this study. Also, Rowley (2002) documented that the strategy is useful for workplace-based studies and allows comparison of a limited number of organisations (as was required in this study). Dickson-Swift et al. (2014) utilised the case study research strategy to examine factors that improve health and wellbeing of employees in three Australian workplaces. This is similar to the scenario presented by this study (examining and comparing two case organisations). Moreover, it addressed the gender-based question for comparison of the studied workplaces. The phenomenology strategy does not permit these comparisons. Earlier, Yin (2003) noted that the strategy enables the researcher to explore individual and organisational experiences. Although less valued in health care settings, the case study research strategy is commonly utilised in business and management studies (Easterby-Smith et al. 2008; Collis and Hussey 2009; Saunders et al. 2009; Crowe et al. 2011). This study examined two non-health, corporate HWs with a business or productivity orientation, thus reinforcing the suitability of the strategy for this study.

Essentially, the case study research strategy was used due to its capability of realising and addressing the research questions in this study.

4.7 Comparison of potentially relevant research strategies in this study

Section 4.1 clearly stated that case study is the research strategy adopted in this study. This section justifies the rejection and non-use of other research strategies.

Ethnography, rooted in anthropology, was not chosen as it requires the researcher to be immersed and be part of the studied sociocultural group. Laws and McLeod (2004) noted that culture is a key and unifying construct in ethnography. This enables better understanding of the phenomenon. Bogdan and Bikken (2007) utilised ethnography to study groups and communities. It involved close observation of social phenomena (Garison 2008). This is not a culturally based study, hence, ethnography was not considered a suitable strategy for this study.

Grounded theory was a potential approach for this study. It is designed to generate new theory from a situation (Robson 2011). The study did not have this intention. The vital interest in the case study strategy is the process rather than the outcome (Laws and McLeod 2004). As a result, grounded theory was not utilised.

Also, phenomenology was not utilised because of its limited ability to answer the research questions posed by this study. This study required multiple data sources to effectively deal with the research questions but phenomenology was inadequate to meet the study needs. As mentioned earlier, in section 4.6, Thomas (2011) confirmed the extra quality of the case study strategy by enabling data comparison within and across cases or units of analysis, as required in this study. The capability for this comparison is achieved through its flexibility and allowance of multiple data sources deployed in answering the research questions (as was necessary for this study). As a result, these attributes make the case study method more robust and acceptable in this study than phenomenology. Similarly, Rowley (2002) noted that case study is relevant and useful for researchers interested in workplace-based projects and those wanting to compare a limited number of organisations in their study (as was

required in this study). Moreover, Dickson-Swift et al. (2014) utilised case study as a research strategy to examine factors that improve the health and wellbeing of employees in three Australian workplaces. In phenomenological strategy, a 'lived' human experience is described by the 'experiencer' in a manner that assists the researcher to extract textual data. However, this was not used in this study because it has just one legitimate data source, which is the interview. The interview (one of the data sources for this study and the only data source for phenomenology) expresses only the views and experiences of the participants (Goulding 2005), which is inadequate to answer the research questions posed by this study. Numerical data from clinical and occupational health records and textual data from the service books and HSE policy were additional data deployed to answer the research questions in this study. Hence, phenomenology was considered unsuitable for the complex nature of the two research questions (section 1.4) in this study. So, phenomenology was not used because it describes the meaning of the 'lived experience' of individuals of a phenomenon or a concept (Creswell 2007) only. The researcher attempts to describe the subjective experience of a group of people with a view to integrating common themes into an exhaustive description of the phenomenon. As a result, it is based on a paradigm of personal knowledge and subjectivity only. This study is designed to explore a complex contemporary phenomenon in a real-life context using multiple data sources, including objective and subjective data (numerical and textual data) derived from both primary and secondary data sources. This was followed by comparison and interpretation of these data. The flexible design of the case study research strategy adopted in this study aligns with study requirements but is not compatible with phenomenological strategy.

Feminism was another research strategy that was considered for this study. It was not deemed appropriate as the depth of discourse on power and identity was not central to the study. In addition, the focus of the study on gender equality in health allowed less emphasis on uncovering power relationships, unspoken rules and existing forces that guide work relationships (Lien, 2005). Earlier, Smith (1980) correlated how racial or class inequalities, sexuality, age and disability should be classified as central to feminism. However, most authors, such as Lober (2005), have acknowledged that feminism's basic goal is equality between

women and men (this connotes the researcher's perception of this concept). It advocates equal opportunities for these gender categories, although it is mostly based on the assumption that women suffer more and are poorer and more discriminated against in welfare policies (Hussain and Asad 2012). These situations do exist but not in all cases. Hence, there are circumstances where men are equally discriminated against. Most of the previous research approaches including the case study strategy are holistic and address gender issues among others. In line with the researcher's understanding of feminism, Archibong et al. (2006) demanded suitable intervention plus far-reaching sensitisation programmes on gender inequity (Archibong and Sharps 2011) in various settings including the workplaces. This is to ensure equity of opportunity and outcome for both sexes in all affairs plus health matters. Also, the previous paragraphs, section 4.6, highlighted the extra quality of the case study strategy which makes this research strategy more applicable for this study than feminism. One of the features of case study is the ability for data comparison not only within but across cases or units of analysis as required in this study, comparisons of data was done for the two SHWs – 'A' and 'B'.

4.8 Defining case studies

In order to better appreciate the choice of case study as the research strategy adopted in this study, some relevant definitions were highlighted in relation to this study. Crowe et al. (2011) explained case study as a research strategy that enables a multifaceted, in-depth exploration of complex events in their natural settings. For example, data for the study were collected at two 'HWs' (the natural setting). Moreover, the case study approach allows interventions (e.g., various WHPPs carried out at the institution of study), policy developments (e.g., the HSE policy and the policies outlined in the service books), critical issues, programmes and services for system reform to be studied in their real-life context. Each organisation was assessed with its peculiarities. It is an empirical inquiry that investigates contemporary events in the real-life context. It is useful when there is a blurred boundary between a phenomenon and the context of study (Yin 2003). Collis and Hussey (2009) explained case study as a methodology that explores a single phenomenon in a natural setting using a variety of methods to obtain in-depth knowledge. Yin (2012) described it as a

research method that facilitates deep investigation and understanding of real-life contemporary phenomena in their naturalistic settings. Case study research accommodates both qualitative and quantitative data (Gerring 2007), thus allowing a rich mix of data to be deployed in the understanding of phenomena. Case study research is sometimes referred to as 'naturalistic' design (Crowe et al. 2011). Gerring and McDermott (2007) described case study research as the intensive study of unit(s) to broaden understanding of similar unit(s). Laws and McLeod (2004) perceived case studies as the "end-product of field-oriented research", as utilised in this study.

In summary, case study research enables the researcher to explore individuals or organisations in their natural settings as deployed in this study by breaking down and building up various phenomena. The research strategy is endowed with the ability to assess and evaluate programmes (where required) and offering solutions to particular real-life challenges. These are possible as a result of its key qualities of multiple data sources and comparison.

4.9 Types of case study

This section indicates different types of case study and their relationship to this particular study. Researchers have used different approaches to categorise case studies, which has resulted in overlaps among the prototypes. The approaches range from simple to complex classifications within and across studies (Shanks and Parr 2003; Yin 2003; Howcroft and Trauth 2005; Crowe et al. 2011). A study could share attributes of more than three case study prototypes, as demonstrated below in this study. As a result, grouping of case studies into a particular type is not a mutually exclusive process (Flyvberg 2006; Crowe et al. 2011).

Laws and McLeod (2004) explained that discipline, research focus or final report could be used in describing and categorising the existing types of case study. For example, there exist psychological, ethnographic, interpretive, evaluative and descriptive case studies. Following this analogy, this study is categorised as a multiple, organisational and occupational health case study focusing on the health and wellbeing of the studied employees' institutions. Likewise, it is an interpretive and descriptive case study that explored and described employees'

perceptions and experiences of workplace efforts in disease prevention and gender equality in health matters. Additionally, this research is an evaluative case study (assessing the impact of implemented WHPPs at case organisations). Further detail is highlighted subsequently.

4.10 Highlights of case study prototypes in relation to this study

Stake (1995) categorised the case study approach into three main types: intrinsic, instrumental and collective case studies.

The **intrinsic case study** deals with peculiar, atypical or unique phenomena. This does not necessarily follow any particular trend; rather, it is selected on its own merit and is a source of interest to the researcher for examination. This could be exemplified by a study that examines 'couplehood' in dementia (Hellstrom et al. 2005; Anandan et al. 2010). Following this example, the current research cannot be said to be an intrinsic case study for several reasons. For example, the MDGs and workplace health promotion programmes are global and contemporary phenomena in which all stakeholders are expected to participate. As a result, the study did not follow an atypical trend.

The **instrumental case study** serves as a steppingstone to gain a better understanding of an event, situation or phenomenon. The case is not the primary reason for the study but helps to explain other events, issues or phenomena or offers an explanation of a theory. An example is a study (Luck et al. 2007) conducted on potential violence by patients in an emergency department, which explored its possible cause(s). The current study is a form of instrumental case study, which explored the contributions of the organisations studied to the realisation of the MDGs (MDGs) in Nigeria. Assessment of the contributions of participating industries to the realisation of the MDGs was the primary reason for the study, but not the exploration of disease prevention efforts and identification of workplace health promotion programmes at the institutions of study. Specifically, exploring disease prevention efforts and identifying workplace health promotion programmes were instrumental in the identification of contributions made by the organisations studied to the achievement of the MDGs.

The **collective case study** involves multiple cases with opportunity for a wider and varied understanding of a particular issue or event – for example, the study in which Scheib (2003) examined the role of stress in the professional life of the school music teacher, and one that examined the effect of the introduction of electronic health records instead of paper-based records into NHS systems in the UK (Robertson et al. 2012). The latter (for instance) involved five NHS acute and mental health trusts. Thus, it allowed varied analysis of the implementation of the new technique (electronic health records) in record systems in the UK. The present research could also be described as a collective case study that allowed the opportunity to examine the variation in efforts directed at combating the predominantly reported diseases in the corporate, non-health institutions studied. Consequently, this was intended to explore their contributions to the attainment of the MDGs in Nigeria. In addition, it granted the opportunity to examine the morbidity and mortality differences between genders at the two non-health, corporate 'healthy organisations'.

Another classification was provided by Flyvberg (2006), who categorised case studies as extreme, maximum variation, critical and paradigmatic. Each of these is outlined below.

An **extreme or deviant case study** is reported to be useful in investigating unusual or peculiar situations, events or phenomena. These could be extremely good or bad cases. It is similar to the intrinsic case study described in the previous paragraphs. This research does not share this attribute. **Maximum variation cases** are used to obtain information about various dimensions of the case, process and outcome. For instance, information from five or six different cases could be sought with reference to a particular issue such as location and budget. This study is designed to explore maximum variation. All the secretaries and their line managers were approached to take part in the study and were from different geopolitical zones in Nigeria. The Nigerian government has federal character policies for work appointments. However, as a backup plan, convenience sampling existed to recruit participants in a situation where there is a clear lack of representation from a given geopolitical zones during the fieldwork. Hence, an arrangement was put in place to ensure maximum variation in such circumstances. However, there was no need for it as participants

represented the varied geopolitical zones in the country. **Critical cases** involve logical deduction and are confirmatory of a given phenomenon event or situation. The research shares this attribute by exploring the contributions of healthy organisations to the realisation of the MDGs in Nigeria. The importance of HWs and healthy employees to productivity and organisational performance has been well researched and documented in the literature. The researcher sought approval of case organisations deemed to have the necessary and sustainable structure (Occupational Health and policy) to ensure health protection and maintenance among the workforce. They were 'HWs', contributing to preventing, reducing and combating disease at their institutions. **Paradigmatic cases** allow the establishment of a school of thought within the domain of study and thus require the setting of standards. This study does not share these characteristics. It did not set out to form a standard or form any school of thought. Findings from these studies are within the context of and are peculiar to the two studied case organisations.

Robson (2011) classified case studies into two broad categories – **holistic** (single) and **multiple**. In multiple case studies, theory suggests the same or a predictable different result. Moreover, Robson further classified single case studies into seven categories: individual, organisational and institutional, set of individual case studies, cross-national, social groups, community, and events, roles and relationships. These categorisations are as explained below.

An **individual case study** is a holistic picture of a person, event or process with a linkage to cause and effect. This study partly shares this attribute. It was intended to describe the WHPPs at each of the two organisations within their contextual environment and the resultant effects on the achievement of MDGs 3 and 6. **Organisational and institutional case studies** involve places such as workplaces and schools. They are similar to individual case studies, described above, but encompass multiple versions of individual case studies. This type examines best practice or evaluates policies, change processes or adaptations to new procedures. This study explored the ways in which the two participating organisations prevented and combated disease in their workplace. Consequently, the study assessed best practice in disease prevention and the

resultant effects on the achievement of goals 3 and 6 of the MDGs. Hence, this study could be grouped under this category. **Sets of individual case studies** deal with more than one similar trait studied. The study shares this attribute because it examined the morbidity and mortality patterns of some selected health problems–diabetes, hypertension, malaria and morbid obesity (among others). This is in addition to the common health problems identified at each of the two participant institutions. The aim was to describe the two organisations individually within their contextual environment. Multiple variables were studied. For instance, the different types of workplace health promotion programmes targeted at the commonly reported health problems (including diabetes, hypertension, malaria and morbid obesity) were examined. The WHPPs included fitness programmes, counselling services, health information and health education services as provided by the occupational health services at the organisations studied. A **cross-national case study** involves a comparative study of national governments and their policies. This study is defined within the national context of Nigeria, although using an international guideline – the UN-MDGs–as a benchmark to determine the performances of the two case institutions. This study partly shares the features of this prototype. A **social group case study** deals with a family or a particular case, as demonstrated in Anandan et al. (2010), which determined reasons for differences in recruitment rates of minority ethnic people in asthma research. This research is multi-professional and not specific to a particular familial trait or social group. Additionally, the study involved transnational establishments, and, as such, could not be classified as a social group case study. A **community case study** is usually descriptive and sometimes exploratory. It focuses on patterns of and relationships between major aspects of the studied community–for example, family and work. This study shares some attributes of this. Case organisations are subsets of the community studied. **Events, roles and relationships case studies** are exemplified by studies undertaken to examine the doctor–patient relationship (Robson 2011). This research is not a role-relationship study. The research determined the achievement by two corporate institutions in disease prevention and in ensuring gender equality in health matters at work. Also, Yin (2009) outlined types of single case study as holistic, critical and extreme. **Holistic:** involves a single study but one representing a global picture. This

study cannot be said to be holistic. The study is in the context of the Nigerian environment. It only described the activities and disease prevention efforts of the two organisations studied. **Extreme case:** this is a rare form of study emerging from simple and holistic cases. It provides the basis for subsequent possibilities. This study does not share this attribute, as highlighted in the above paragraph. **Critical case:** the expected outcome supports the known theory, in this prototype. It is a type of case study that accepts or rejects a known theory – for instance, a study that sets out to investigate the effect of organic solvents on workers as a cause of brain damage, and examines an enterprise that follows strictly all the health, safety and environmental guidance on air quality management. Such a studied enterprise is referred to as a critical case enterprise (Flyvberg 2006). This study shares a feature of a critical case in the choice of industries with occupational health services. In addition, these workplaces involved in both proactive and reactive measures to curtail disease and thus sustain or maintain workers' health. As a result, the study, sharing feature of critical case study was used to confirm the effects of implementing proactive and reactive workplace health measures on curtailing diseases at work.

Merriam (2002) categorised case studies as particularistic, descriptive and heuristic. These are as highlighted below.

A **particularistic case study** concentrates on specifics. It concentrates on a given concept or idea, examining multiple variables and units of analysis. This study shares some of these features as it was designed to focus on efforts by participant organisations to combat diseases (including diabetes, hypertension, morbid obesity and malaria as a unit of analysis). A **descriptive case study** has the features of an in-depth explanation of event(s). This is exemplified in a study (Tolson et al. 2002) that dealt with coping mechanisms during menstruation by women with Parkinson's disease. Participants from the two corporate institutions in this study gave accounts of their experiences and knowledge of disease prevention efforts in the workplace. Additionally, the respondents were able to give these accounts in relation to their gender needs. A **heuristic case study** leads to the production of new meaning and understanding. This study does not have this attribute.

Yin (2003) also described various types of case study: explanatory, exploratory, descriptive and multiple (collective).

The **explanatory** case study describes a programme and its effects. It is useful for complex life phenomena that cannot be addressed by survey and experimental study. This is exemplified in a study by Joia (2002) that analysed the effects of web-based learning in a community in Brazil. The present study shares this attribute. The **exploratory case study** is used to examine interventions with uncertain and varied output or results, as seen in a study by Lotzkar and Bottorff (2001) on the development of the relationship between nurse and patient. **Multiple (collective)** case studies allow the researcher to examine phenomena or interventions from various and diverse perspectives with comparison within and between cases. The predicted, observed or contrasted trends are usually theory based. The current study shares this feature by involving more than one organisation, with the opportunity to look within and across the two cases of study.

From the foregoing, this study can be explained as following the eclectic case study categorisation. For instance, it can be referred to as an instrumental case study, because the phenomena studied (disease prevention and practice of gender equality in health matters) served as a stepping stone to gain better understanding of another phenomenon (contributions of case organisations to MDGs' success). The study explored the contributions of organisations to the achievements of the MDGs (MDGs) in Nigeria. The influences of participating industries on the achievement of the MDGs were the primary reasons for the study, but not the exploration of disease prevention efforts or identification of workplace health promotion programmes. Specifically, exploring the disease prevention efforts and identifying workplace health promotion programmes were instrumental in the identification of contributions made by the case organisations to the realisation of the MDGs. Also, the study is exploratory because it examined interventions (workplace health promotion programmes in preventing and combating disease at work) with varied outputs. Furthermore, this study can be referred to as organisational because it involved workplaces. It is multiple because of the opportunity for comparison within and across cases. Also, it is an occupational health case study because it was conducted within this field of

practice.

In summary, the study utilised eclectic categorisation with attributes related to nearly all the highlighted prototypes, as demonstrated in the previous paragraphs. So, this study can be classified as an instrumental, exploratory, organisational, multiple occupational health case study of two healthy organisations in Nigeria.

4.11 Case study research: a brief historical perspective

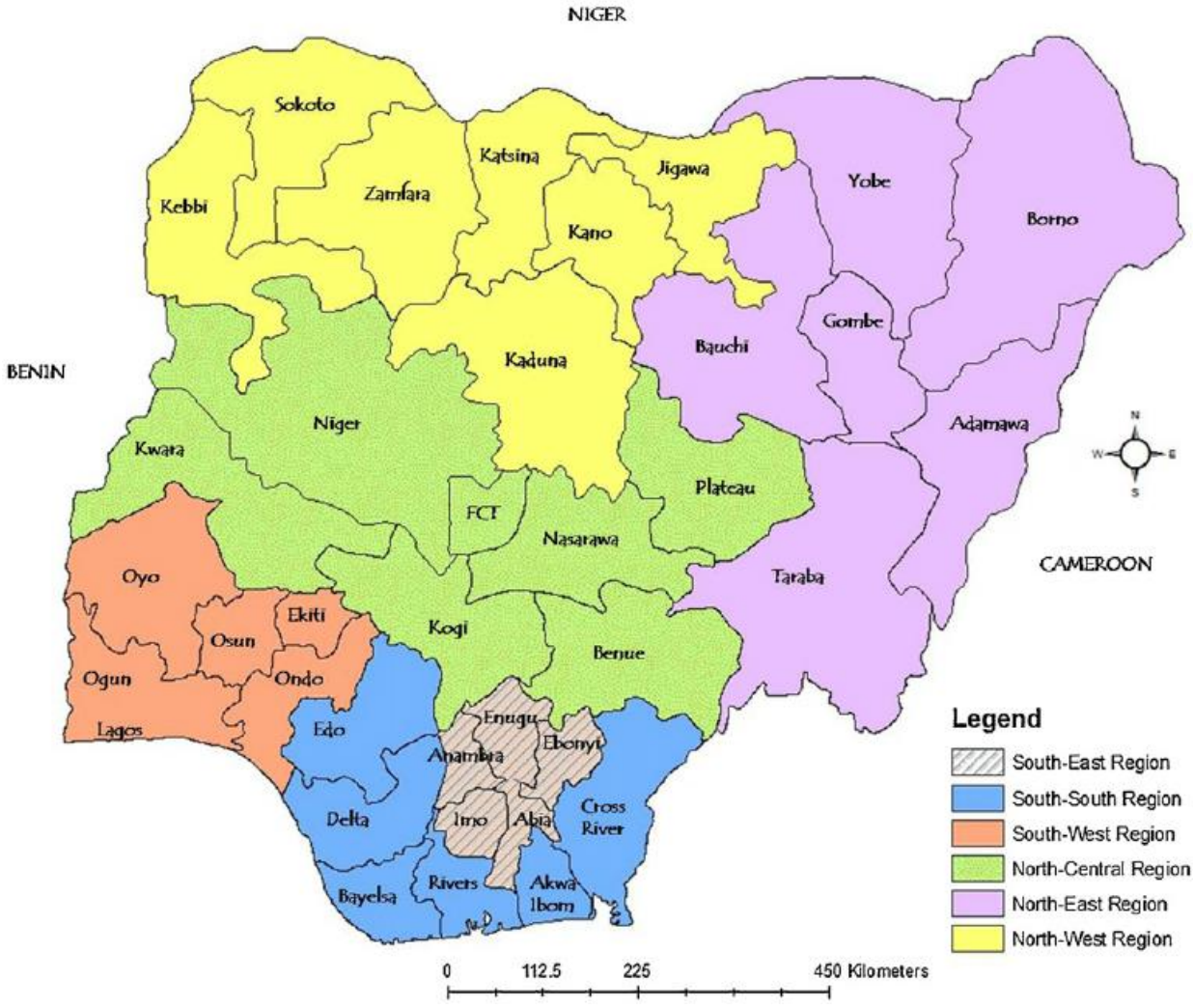
Case reports, history and services have a routine tradition in clinical practice (Crowe et al. 2011). The case study research can also be traced to the work of Robert Park during the 1920s, in which he stressed the value of human experiences. In the 1930s, the case study strategy was criticised for not providing evidence of an intersubjective agreement as a result of a number of studied cases. Thus, it was considered unscientific and non-generalisable. In the 1950s, quantitative methods became the major prominent sociological approach and this was a new, positive era for case studies. Specifically, the use of case studies as a teaching method to ensure active participation and 'construction' by students at Harvard Business School led to a breakthrough in this research approach (Flyvberg 2006). Earlier, Boyce (1993) noted that students were encouraged to conduct examination of cases, define problems in the case, identify key players and offer possible solutions. It is noteworthy that an appreciable number of scientific breakthroughs, including Einstein's theory of light relativity measurement at a distance, have resulted from case studies (Robson 2011).

4.12 Research setting

Nigeria, the largest and most populous nation in sub-Saharan Africa, with an estimated population of 190.9million (UNFPA 2017), is a nation endowed with great potential. The society remains diverse, with growing disparities ranging from regional, ethnic, economic and religious groups to gender. The nation is made up of 389 ethnic groups across the 36 states of the nation plus a federal capital territory. 49% of the population are women, experiencing discrimination and still regarded as an underclass and lacking equality of opportunity compared with their male counterparts (UK Department for International Development

2012). Consequently, Nigeria gives an insight into Africa's development prospects. The country ranks 118 of 144 countries in the Global Gender Equality Gap Index with a score of 0.643 (Global Gender Gap Report 2016). Women make up 21% of the corporate (non-agricultural) paid labour force. Nigeria has one of the lowest rates of female entrepreneurship in sub-Saharan Africa. Only 15% of women have a bank account of their own (UK Department for International Development 2012). Nigeria's gender-related development index is 139 of 157. The Nigerian map shows the general area of the organisations studied in Lagos, Nigeria.

Picture 2: Map of Nigeria.



4.12.1 Rationale for choice of study sites

The main rationale for choosing the study sites is to ensure participation of SHWs in the study. The nation's seaport entertains a large number of foreign vessels (Eniola et al. 2014) and is referred to as the 'gateway to the Nigerian nation's economy'. This location is the 'hub' of economic activities in Nigeria. So, any activities that affect health and wellbeing at work in this environment could impact positively or negatively on the nation's economy, and consequently on the development. Importantly, the organisations within the port environment were chosen as study sites because research has shown that no development is achieved without a progressive economic development (Bhargava 2001). Also, no development occurs without the human and financial components. In Nigeria, the port remains the peak of economic activities, as a result it was purposely selected as the study location. Bloor and Wood (2006) acknowledged the importance of purposive sampling in case study research, done with a view to accessing wealth of information, and to answer the research questions as deployed in this study. Hence, the environment served as a viable site to explore the research title of this study. Furthermore, based on personal and professional experiences, and literature review (please see section 1.1.1, chapters two and three for details), the port environment is the main location in Nigeria with assurance of SHWs. This is due to its endowment with transnational organisations that have workplace principles of following best practices in national or international health and wellbeing matters. It is perhaps because of their connection with their overseas components, and the need to interact with foreign nationals in the process of carrying out their work activities. Consequently, two non-health, corporate, transnational and sustainable healthy organisations located in Lagos, in the South West of Nigeria, were carefully and strategically recruited for the study. The organisations were among the 27 government organisations and private industries co-located around the seaport facilities. The Nigerian nation has been utilising the sea as a major means of transport for both cargo and people since as far back as the 15th century (when it engaged in trade of artefacts with the Portuguese). Strategic choice of cases was documented as vital in case study research thus, was applied in this study. This becomes necessary because of the potential for the transferability (generalisability) of studies in related settings (Flyvberg 2006). Similarly, the choice or sourcing of participant organisations/employees from this environment is strategic to the research topic/questions (which determines efforts made to combat malaria and 'other diseases' while ensuring gender equality in health at work)

due to the 'development' component of this title. This translated to going to the source/root of the Nigeria's economy with a view to determining efforts made to attain the MDGs in the nation. So, the two organisations studied were non-health, corporate and transnational organisations. They had been rendering occupational health, safety and environmental services for over five years prior to commencement of this study. Furthermore, the choice of data collection at the Lagos offices of the two studied SHWs was to capture data from employees with sedentary work schedules and lifestyles. Experience has shown difficulties faced by Lagos employees in achieving healthy lifestyles because of a generally poorly maintained social infrastructural facilities including poor access/road networks to and from work. This has led to prolonged travel time to and from work, with little time for rest or leisure. Also, the poor road network has led to lack or inadequate consumption of healthy meals and at the right time.

Picture 3: The research setting.

4.13 Recruitment for the study

Two of twenty – seven organisations around the seaport were recruited for the purpose of this study – one government and one private within the geographical study location (Lagos State, South West Nigeria) that met the required criteria of being a sustainable healthy workplace and best HSE- performing organisation. The organisations were identified based on their occupational health and safety records of awards. Each of these two organisations has a

division that has been providing occupational health services over the last five years. Additionally, these organisations have HSE policies. Also, they have won awards and recognised as the leading HSE Performance in 2014 (one was a government and the other was a private organisation). Lastly, they were able to provide formal approval letters indicating permission and consent to carry out the study.

As part of the effort to ensure inclusion of both sexes in the interview, an initial enquiry was made to ensure that both sexes engage in administrative work at case organisations. The choice of administrative secretaries and line managers (divisional heads) was influenced by the fact that their job schedules are largely sedentary in nature. The purpose was to capture their personal accounts of their lived experience of health and wellbeing at work. The negative health effects of a sedentary lifestyle have been documented (figure 8; Yusuf et al. 2004). Formal invitation letters, accompanied by information sheets, were sent to the potential participant organisations. Additionally, arrangements were made to have preliminary discussions with the heads of administration and human resources. This helped the researcher to discuss the study protocol and allowed the two institutions the opportunity to raise concerns before providing formal approval letters for the conducting of the study. On approval, several copies of the information sheets and consent forms were handed over to the heads of HR. The purpose was to communicate and distribute the information leaflets, together with the consent forms, to other heads of divisions. Consequently, there was downward dissemination of the information sheet about the study to potential participant employees. Appointments for interviews were made when the 'informed consent' forms had been signed and returned, which was done within a minimum of 24 hours prior to the data collection processes.

4.14 Sampling approach

Non-probability and purposive sampling methods guided the choice of the participant organisations and the interviewees. Specifically, the research questions informed the choice of participant organisations. This has been documented as a trend in case study and multiple method research approaches. Bloor and Wood (2006) explained the reason behind the purposive sampling strategy in case study research. It is targeted at cases with a wealth of

information based on their match criteria for answering the research questions. Additionally, the organisations were chosen because they met the criteria of non-health, corporate, transnational HWs.

The administrative secretaries and their line managers (divisional heads) were invited to participate in this study. They were purposely chosen to share their experiences on workplace health and wellbeing. Also, both genders perform secretarial functions at the organisations. As a backup plan, a convenience sampling strategy was utilised when there were not enough participants to be interviewed during the fieldwork at organisation 'B'.

4.15 Inclusion and exclusion criteria for studied organisations and participant employees

4.15.1 Inclusion criteria

- Organisations with best HSE performance
- Organisations with occupational health department: with human resources, committed professionals and structural components to support proactive or preventive programmes
- Corporate organisations: in the country of study, there were no documented studies on occupational health at non-corporate organisations; even among the corporate organisations, limited data exist on occupational health and safety matters
- Healthy organisations willing and consenting to participate
- Employees willing and consenting to participate
- Establishment in existence for a minimum of five years
- Workers employed for a minimum of five years
- Due to the possibility of staff rotation, employees have worked at the study location for a minimum of one year
- Records of non-occupational health diseases (top three common health challenges plus CVD risks/diseases).

4.15.2 Exclusion

- Organisations with poor HSE performance
- Data on accidents excluded: most previous research in the field focused more on safety practices at work

- Education and financial organisations
- Studies that focus on mental health issues or psychological health
- Studies with health care providers as the population of study
- Individuals employed for less than five years
- Non-willingness to participate by an employee
- Employees who have not worked at the study location for a minimum of one year
- Organisations without HSE departments and occupational health services
- Organisations without HSE policies.

4.16 Methods and data collection process

This study adopted the case study research strategy and utilised a multiple method of data collection process, thus allowing for data comparison. This was used previously by various researchers, for example in the work of Brazier et al. (2008), who studied and evaluated an integrative approach to cancer care. Also, the data collection process utilised is consistent with processes used for national health surveys and workplace screening (Statistics Canada 2002). The multiple data sources in this research included documentary analysis of occupational health and safety records, clinic attendance records, audio-recorded interviews and the transcribed hard copies from the semi-structured interviews of the participant employees. This multi-methods was used and were categorised in the past by researher as primary and secondary data sources (Wahyuni 2012).

The study was conducted in two phases. These phases were independent of each other. Phase one involved documentary analysis of case organisations' service books, HSE policies and occupational health/clinic attendance records to identify the predominantly reported health problems. The data sought from these records included the morbidity/mortality records of employees and preventive programmes/information on malaria and 'other diseases' (CVD health risks and the top three reported health challenges) at the participating workplaces. The second phase involved the collection of primary data. It involved interviewing administrative secretaries and their line managers using semi-structured interviews (appendix 4) adapted from relevant reports – WHO

(1999) (see appendix 5). Parker (2012) noted the importance of dealing and communicating directly with the experts to better understand contemporary world issues. The interviewees described their personal experiences related to CVD health risks and malaria disease prevention programmes at their workplaces. Also, they were able to give accounts of issues regarding gender and health matters at work. Data comparison in this study is related to the work of Patton (2002). Patton explained that multiple sources of data deployed in a research (as utilised in this study) help to cross-check consistency in research data, thus enhancing robustness.

4.17 Semi-structured interview: definition and justification for its use in the study

Interviews remain the most commonly used data collection method in qualitative research (Gill et al. 2008). Basically, three types of interviews exist: structured, semi-structured and unstructured. The structured interview does not allow flexibility or in-depth inquiry as required with a case study research approach. On the other hand, the unstructured interview is quite disorganised with no predetermined ideas. This is because it generally asks the interviewees broad questions, and subsequent questions are dependent on their initial responses (Holloway and Wheeler 2015). In addition, it demands more interview and analysis time. The semi-structured interview, however, has predetermined key concepts and ideas, thus allowing a flexible and more focused inquiry. Saunders et al. (2009) outlined the semi-structured interview as a non-standardised or qualitative interview. It lies between structured interviews and in-depth interviews. It was used because of its advantage of predetermined lists of themes and questions, as in the structured interview schedule. It allowed meaningful flexibility for the interviewees to freely express themselves.

The interview enabled the researcher to get first-hand information from sources or informants who were well acquainted with the phenomenon of study. The participants had the opportunity to express their opinions and this allowed the researcher to understand how and what people think about the phenomenon of study. Also, it enabled the researcher to understand how people interpret the world around them (Zohrabi 2013). Furthermore, the advantages of the interview (Johnson and Turner 2003; Gill et al. 2008) include (a) it provides in-depth

information regarding the study phenomenon as required in case study methodology, and (b) it allows good interpretative validity, particularly allowing a high level of validity in this study. However, the interview has its weaknesses. These include cost and time of data gathering and interpretation. In order to tackle these challenges, the researcher had as a backup plan the virtual or telephone interview, particularly for busy participants. This was to allow participants to be reached at their convenience. In the end, there was no reason for the researcher to implement this plan. Specifically, the interview method of data collection enabled participants to express their views, stories and experiences (Laws and McLeod 2004) of how their organisations have contributed to combating and preventing commonly reported health problems (including CVD disease or risk factors and malaria). Also, this method (unlike the quantitative method of study) offered the researcher an opportunity to get closer to research participants (Flyvberg 2006). Additionally, the experts (divisional heads and participants) gave their opinions and knowledge of the phenomenon of interest– workplace disease prevention and management– during the interview. The interviews lasted about 20 minutes for each participant. On average, health-related interviews last 20–60 minutes (Gill et al. 2008).

4.18 Interview methods

Primarily, a face-to-face interview was planned and utilised for the study. A copy of the semi-structured interview guide used is attached as appendix 4. As a contingency plan, the researcher planned the use of telephone interviews or virtual calls. This was to address the needs of busy participants who might not be available at the time the researcher was in Nigeria to collect the data. This arrangement could also have accommodated individuals who needed to cancel the interview at very short notice. However, there was no need for utilising the planned contingency plan as the interviewees reported (except one without reason) as scheduled. Overall, the interviews went according to plan due to the flexible arrangements that were available for the interviewees, thus, every consented participant turned up for the interview. Before the interview and while seeking consent, the researcher had gained the confidence of participants through assurance of their confidentiality and a risk-free participation in the study. This may have encouraged all to have turned up for the interview. Also, during

the interview, the researcher's professional experience as occupational health practitioner assisted in framing the questions on the semi-structured interview and noting relevant information to the research.

4.19 Details of how the semi-structured interview guide was used for the data collection

The second phase involved the collection of primary data. It involved interviewing administrative secretaries and line managers. Face-to-face interviews were conducted for all the consenting participants (section 4.24 highlights the details of consent) at organisations 'A' and 'B using the semi-structured interview guide (sample attached as appendix 4).

At the inception of each interview, the researcher introduced herself as a PhD student from the University of Bradford and said that she appreciated their consent to participate in the study. She then briefly spoke on the essence of the interview with a view to corroborating the information provided on the research information sheet (earlier given to the interviewee). Furthermore, the researcher assured each of the participants of the confidentiality of the data and of risk-free participation in the study. They were enjoined to speak clearly during the interview.

At this point, the audio recorder was turned on. The researcher noted key comments, phrases or queries on the semi-structured interview guide for each of the participants alongside the recordings in spaces provided for that purpose (a form of field note). Each of the recordings for participants was then compared with the information jotted on the interview guide; this was updated as necessary during the transcription phase.

Overall, there were four question areas (sections referred to as themes), each of which had guided questions (appendix 4). The four areas are as follows: (1) healthy workplace, employees and organisation, (2) health and wellbeing, (3) experiences and understanding of the workplace health promotion programmes and similar initiatives, and (4) gender diversity, health and wellbeing programmes. The researcher went through each of the question areas with each interviewee, using the lead questions under each of the four sections to elicit the required information. For instance, area 4 raised questions on equal opportunities and

understanding of a gender-equal workplace (in terms of policy and practice). Also, the area raised questions to determine whether the gender needs of males and females were met at work. Hence, area 4 was framed to elicit information with a view to addressing the second research question (section 1.4).

With the interview method of data collection, participants gave and expressed their lived views, stories and experiences of how their organisations have contributed to combating and preventing commonly reported health problems (comprising CVDs or risks and malaria). Furthermore, participants had the opportunity to enumerate and comment on gender-specific health initiatives organised by their organisations. Each interview was brought to an end with appreciation given to the participants once there were no further comments/queries by these participants. The interviews lasted about 20 minutes for each of the participants.

4.20 Reflexivity

Reflexivity deals with a researcher's subjective attributes when encountering people and events in the field (Primeau 2003). It relates to the level of control a researcher has in a study, either intentionally or otherwise (Jootun et al. 2009). The consideration of reflexivity by a researcher enhances the quality of the study (reliability) through the understanding of the researcher's position and values at different stages of the study. These stages include the interview phase (regarding questions to ask or not, and who and when to ask or not). This researcher made use of a semi-structured interview guide for consistency and to strike a balance regarding the items raised during the interview. Further justification for the use of the semi-structured interview guide is provided in section 4.17 of this chapter. Additionally, reflexivity entails the researcher's mode of gaining access to the organisations and the participants (how the researcher acted or interacted in the field). A structure was put in place to ensure uniformity through the deployment of inclusion and exclusion criteria highlighted in section 4.15. Moreover, other quality criteria used in this study are provided in section 4.23 of this document. This study utilised a qualitative research approach involving multiple data sources with a constructive interpretation of

experience from the textual data component. As a result, it is not merely factual. Field notes were taken in addition to the recorded responses of participants to the semi-structured interview questions at the time of interview. Field notes indicated the researcher's awareness of active participation in the data collection process (Primeau 2003). Consequently, the researcher can be said to have passively become part of this research from two perspectives: (a) personal biography, including being a working-class female, and (b) being an occupational health and safety professional. Moreover, the researcher was aware of the inadequate enforcement and non-enforcement of occupational health and safety laws in Nigeria. Additionally, the researcher was conscious of the limited inclusion of females in white-collar jobs, paid employment and policy formulation (including occupational health, safety and environmental policy). Also, the choice of goal 6 as it relates to 3 of the eight MDGs is a reflection of the researcher's gender orientation and professional role. The researcher was conscious of the need for extra support for women regarding health and wellbeing at work, due to their additional responsibilities at home from household chores. So, it can be said that the researcher's dual roles situated the study and shaped the data collection process, analysis, and presentation and reporting of findings. These attributes might have influenced the researcher to either under-rate (under-report) or exaggerate the participants' accounts in the field. However, the researcher deployed both the relevant academic and professional ethical guidelines, thus ensuring accurate reports of accounts (as far as possible). More details on the quality criteria adopted in this study are presented under section 4.23 of this chapter.

Also, the use of reflexivity and relevant ethical guidelines by the researcher assisted with asking specific questions about available workplace health promotion programmes. This was with particular reference to the health and wellbeing needs of both males and females at the case organisations. For example, this led to the discovery of inadequacies regarding parental leave for males compared to females.

Finally, the researcher's dual lens of female and an occupational health provider had the potential to influence the choice of words, quotes and phrases from certain participants. Also, it had influence in the development of concepts and

themes from the collected data. Essentially, reported findings could be based on the researcher's memory, the accounts considered most relevant and the researcher's willingness to share them. In order to address these considerations, the researcher kept the field or reflective notes. These included details of how access was gained to conduct the study by the researcher. Also, the researcher's field roles and observer's comments were all documented. Keeping the field notes and applying relevant ethical and professional principles enabled the researcher to effectively manage the situation in a manner that ensured impartial and good data representation.

4.21 Details of data analysis

The purpose of the gathered data was to assist in answering the two research questions (section 1.4) and, consequently, achieving the aim of the study (section 1.3).

Two types of data were gathered for this study. These were (1) data retrieved from documentary analysis (including numerical and textual data), and (2) interview transcripts (textual only).The following procedure of analysis was repeated for the data sets from organisations 'A' and 'B'.

For effectiveness, the analysis was grouped into three main phases. The first phase involved identifying and analysing the numerical data (including the annual recorded incidences of malaria and 'other diseases', frequency of workplace health promotion programmes, and sickness absence and death records for both sexes from 2012 to 2014) from gathered documents using descriptive statistics (tables, percentages, bar/pie charts and frequencies). The second phase encompassed transferring relevant textual data from documentary analysis to electronic copy and storing it in the NVivo software. The software supported the analysis through data storage, management and display capability. The third phase involved transcribing the audio-recorded interviews. In doing this, each of the recordings was played several times for good familiarisation before the commencement of transcription. All information enabling recognition of interviewees from the two healthy organisations was deleted from the data. Each recorded interview and its transcript was assigned a specific code understood by the researcher and supervisors. For instance, A7

stands for interviewee number 7 from organisation ‘A’. Copies of the transcripts were then uploaded into theNVivo-10 software.

The researcher then went through the textual data (documentary analysis and transcripts) repeatedly to systematically generate initial codes from these raw data through categorisation and search for potential themes. This was followed by reviewing these initial themes by reading and comparing all data extracts under each of the themes. In particular, these were reviewed based on their relevance to the research questions (section 1.4) and aim (section 1.3). The second-to-last stage of the thematic analysis involved matching (where necessary), naming and defining the final themes. Lastly, the final themes were then used for comparison with numerical data and were used in drawing inferences that guided in writing the thesis report.

Chapter five presents the data from organisation ‘A’ while chapter six presents that of organisation ‘B’. Section 7.2 highlights the data comparison within and across the two case organisations. Basically, relevant numerical data were compared with textual data, first within each of the organisations, and inferences were made. Second, the data sets were then compared across the two organisations, ‘A’ and ‘B’, and the inferences made were used in writing this report. In corroboration of these analysis steps, Sarantakos (2005) noted that both quantitative and qualitative researchers have used qualitative thematic data analysis. It is considered a common approach to the interpretation of meanings for these researchers (Wahyuni 2012). Given (2008) referred to the process of qualitative content analysis through identifying patterns and themes within data as thematic analysis. Also, it has been reported that case study research accommodates multiple data including numerical and textual data (Gerring 2007). This allows for a rich mix of data.

In summary, descriptive statistical methods and thematic data analyses were used in this study. The data analysis involved dismantling, segmenting and reassembling data to form meaningful findings in order to draw inferences (Boieje 2010) within and across the case organisations.

4.22 Justification for using thematic data analysis for the textual data

First, the thematic data analysis utilised for the textual data assisted with the formulation of themes, classification and presentation of this data set. Alhojailan (2012) remarked that it is useful for interpretive studies, and therefore it is applicable to this research.

Specifically, this mode of data analysis (thematic analysis recognises, examines and reports patterns or themes within data) was adopted to analyse the textual data component of this study because of its theoretical flexibility (Stirling 2001; Tuckett 2005; Braun and Clarke 2006) thus more suitable for the study. Codes, patterns and analysis were derived through both deductive and inductive processes as a result of the flexible quality of thematic analysis, which makes it relevant for multi-method data sources. These characteristics have been reported in previous research endeavours (Frith and Gleeson 2004; Halldorson 2009; Niece 2011). Hence, the thematic analysis deployed is in line with the pragmatist philosophical stance embraced in this study. Thematic data analysis served as a useful tool in providing a detailed and holistic account of complex data in this study. Although researchers have argued that thematic data analysis is not a stand-alone qualitative data analysis (Ryan and Bernard 2000). Also, the thematic data analysis critics have termed this mode of analysis as ‘anything goes’ (Antaki et al. 2002). This makes it vulnerable to being claimed (Meehan et al. 2000) by another analytical mode (e.g., content and discourse analyses). In particular, Braun and Clarke (2006) posited that grounded theory is closely linked to thematic analysis in terms of coding process and theme development. Yet, the flexibility attribute makes it more relevant as a method of analysis in this study. Appendix 6 includes the picture of the nodes that led to the initial eight categorisations (sub-themes), which were then re-categorised into four themes.

Furthermore, in support of its deployment in this study, thematic data analysis has been noted to be useful in situations where the research is planned to determine the relationships between variables and to compare different types of evidence (Alhojailan 2012). For instance, it was utilised within and across cases in this study. Consequently it is more suitable for textual data of this study.

4.23 Research quality as applied to this study

The qualitative research approach was adopted for this study, with multi-method data collection processes. This section thus examines the relevant quality criteria. Data comparison used in this study enables researchers to benefit from the strengths of both textual and numerical data (Creswell 2009). Case study research offers this comparison opportunity to address a broader range of phenomena and make findings/conclusions more convincing/accurate (Yin 1994). Thus, the data comparison assisted in augmenting the reliability of this study. Over time, there have been efforts to achieve and formalise standards regarding research quality among researchers (Patton 2002; Creswell 2009; Kvale and Brinkman 2009; Maxwell 2009). Moreover, studies have perceived research quality in diverse ways, particularly among qualitative researchers. The quality criteria set by the work of Lincoln and Guba (1985) are the most widely used among qualitative purists. Altheide and Johnson (2013) examined how various qualitative studies have addressed validity criteria in their studies and concluded that they have assisted researchers to establish more trustworthy knowledge in the research community. Similarly, Silverman and Marvasti (2008) emphasised the need for qualitative researchers to demonstrate to the audience that their methods are reliable and that their findings are valid.

Despite the existence of general quality criteria among quantitative and qualitative purists, Loh (2013) acknowledged that these criteria vary according to studies, and not all studies will require the same quality assessment criteria. Similarly, Lincoln and Guba (1985) noted that there may never be excellent strategies to establish the robustness of qualitative studies considering the fact that knowledge is constructed and not fixed (constructivist paradigm).

In order to convince readers of the authenticity or quality of their studies, the quantitative purist puts in place strategies such as validity (the extent to which a concept is accurately measured), reliability or consistency (the extent to which the same result is achieved repeatedly by a research instrument), objectivity, and generalisability (drawing broad inferences from a particular study).Threats to internal validity may occur through the entire research process, which is taken care of by good design (Ihantola and Kihn 2011). This is why a case study with a multi-method design (involving both numerical and textual data) was employed in

this study for the purpose of augmentation and comparison of findings. External validity (generalisability) could be threatened by population, time and environment (Ryan et al. 2000). This is why two case organisations were involved, to obtain answers to and compare findings emerging from research questions (section 1.4). Also, Lincoln and Guba (1985) noted that quality techniques to assess qualitative studies are always open to modification and not closed. Strategies for quality assurance set by these authors have formed the basis for qualitative researchers to assess research robustness and trustworthiness. These are described as a mapping guide to assist constructivist researchers in surviving the potential critiques of their work within the research community. The set criteria are credibility, dependability, generalisability (which can be threatened by selective plausibility (Ihantola and Kihn 2011)) and confirmability. Table 6, below, summarises the general criteria for establishing rigour among qualitative researchers and their relationship in this study.

Table 6: Guidelines to assess quality, trustworthiness and rigour in qualitative studies: the relationship with this study.

Lincoln and Guba (1985)	Creswell and Miller (2000)	Patton (2002)	Maxwell (2009)	Merriam (2009)	Creswell (2009)	Yin (2011)	Comment/remark
Prolonged engagement	pp.127–128	-	p.244	p.219	p.192	p.79	
Persistent observation	-	-	-	-	-	-	
Triangulation (comparison)	pp.126–127	pp.555–560	p.245	pp.215–216	p.191	pp.81–82	Adopted in this study
Peer debriefing	p.129	p.562	-	p.220	p.192	-	
Negative case analysis	p.127	pp.553–554	pp.244-–245	-	p.192	pp.80–81	Adopted in this study
Referential adequacy	-	-	-	-	-	-	
Member checks	p.127	pp.560–561	p.244	pp.217–219	p.191	p.79	Adopted in this study
Thick description	pp.128–129	-	p.244	pp.224–227	pp.191–192	p.79	
Overlap methods	-	pp.556–559	-	-	-	-	
Dependability audit	p.128(audit trail)	p.562 (expert audit review)	-	pp.222–223 (audit trail)	p.192 (external auditor)	-	Adopted in this study
Confirmability	-	-	-	-	-	-	
Reflexivity	p.127	pp.108–109 (investigator effects)	p.243 (researcher bias)	pp.219–220 (researcher bias)	p.192 (researcher bias)	-	Adopted in this study

Adapted from Loh (2013)

Table 7, below, shows Lincoln and Guba's (1985) trustworthiness criteria for qualitative research in comparison with their equivalents in quantitative studies.

Table 7: Comparison of quality criteria in qualitative and quantitative studies by Lincoln and Guba (1985).

Criteria	Techniques	Page	Comments/remarks
Credibility (internal validity)	1.Prolonged engagement 2.Persistent observation 3.Triangulation (sources, methods, investigators) 4.Peer debriefing 5.Negative case analysis 6.Referential adequacy (archiving of data) 7.Member checks	301–304 304–305 305–307 308–309 309–313 313–314 314–316	3,6 and 7 adopted in this study
Transferability (external validity)	Thick description	316	Adopted in this study
Dependability (reliability)	Overlap methods (triangulation of methods) Dependability audit/accuracy – assessing method of inquiry including how data were collected	317 317—318	Adopted in this study
Confirmability (objectivity)	Confirmability audit – corroborates findings, interpretations and recommendations	318–327	Adopted in this study
Above four criteria	Reflexive journal (about self and method)	327	

Adapted from Loh (2013)

Credibility (one of the criteria for assessing trustworthiness in qualitative research) is similar to contextual validity. It addresses the authenticity of case study evidence and the conclusions drawn (Ryan et al. 2000). The authors explained the technique as aiming to authentically capture the lived experiences of people and represent them with convincing text in a manner that demonstrates a thorough understanding of the phenomenon under study by a researcher. It adopts member-checking as one of the key techniques. Member-checking is useful and ethical as it provides valuable insight into the data collected (Loh 2013). Member-checking is one of the quality assurance criteria adopted in this study. Creswell (2009) explained member-checking as a situation whereby the specific description, themes or even the final report is taken back to the research participants. This is with a view to double-checking and seeing whether there is a need for participants to corroborate or modify the information (Patton 2002). However, Bloor (2004) criticised this technique as participants may provide different reasons at different times. As a researcher, what can be understood is the fact that the techniques to ensure study robustness are there as a guide and are better to have in place than nothing. The original research quality designers (Lincoln and Guba 1985) noted that the qualitative check techniques have potential loopholes, and as such should not be seen as golden rules. Bloor (2004) acknowledged that member-checking is not restricted to member validation. It is a procedure to follow-up data collection with a view to further illuminating a researcher's analysis and consequently incorporating such into the analysis and interpretation of findings. There are two subcategories of member-checking: peer validation and audience validation (Loh 2013). Peer validation, adopted in this study, involves seeking relevant expert scholars' opinions (those familiar with the interview theme and interview text theories), in relation to the interpretation of data (Kvale and Brinkman 2009). The research supervisors were able to interpret sample transcripts, which were compared with the researcher's interpretation. Audience validation, as adopted in this study, is described by Loh (2013) as a way of validating data with the research participants and the proposed users and readers of the study. Quite a number of the research participants were approached after the transcript was interpreted to ensure that what the researcher understood was in line with the interpreted data. All participants (except one – yet, adjustment was made following the participant's observation)

agreed with the data interpretation. Also, verisimilitude is among the quality criteria in qualitative studies (Connelly and Clandinin 2000). It describes the realness and truthfulness of qualitative research, and the ability of a written account (of a study) to transport the reader of the research into the world of that study (Creswell 2007). This study made efforts to achieve this through creating a sustained narrative from the beginning to the end. Table 8, below, summarises the approaches to quality in both quantitative and qualitative studies.

Table 8: Approaches to quality in quantitative and qualitative studies.

Qualitative	**Quantitative**
Credibility	Validity
Transferability	Generalisability
Dependability	Reliability
Confirmability	Objectivity

Source: Lincoln and Guba (1985)

In summary, the adopted quality criteria techniques in this study were member-checking, audit trail and reflexivity.

4.24 Ethical considerations, consent, and confidentiality

The University of Bradford ethical approval was sought and approval was granted on 8th December 2014. The confirmation email is attached as appendix 2. Also, a formal written letter seeking consent from the SHWs were sent and approval granted by these organisations before commencement of data collection. As part of measures to ensure confidentiality, the consent letters from the two studied SHWs are not attached to this thesis. This is to prevent confidential information from research setting and/or participant employees going into the public domain. The invitation letter sent to these organisations explained the essence of the study and their role in the research, and the type of information required from the organisations were outlined. Attached to the letter was the information sheet (appendix 3), for a better understanding of the research by the representatives of the organisations.

Moreover, written consent (sample attached as appendix 1) was sought from the participant employees prior to the commencement of the data collection exercise after receiving the approval letter from the participant organisations. Employees had the opportunity to think it over (more than 24 hours) before consenting to participate in the study. Completion of an informed consent form, after reading and understanding the information sheet attached to it and giving feedback, demonstrated understanding of the research and confirmed participation in this study. The consent form included (among other elements) sufficient information about the research to enable participants to make an informed decision before adding their signature. Also, it stated their liberty to participate or withdraw at any time. Moreover, there was a clear understanding of the confidentiality of their involvement in the study. Each participant was given two informed consent forms to sign. A copy was given to them for their records while the researcher kept the second copy. Also, the anonymity and confidentiality of the participants and the involved organisations was maintained to throughout the study (following good ethical practice and standards in research). This was to ensure compliance with the relevant legal guidelines, including Nigeria's Data Protection Bill 2012 (awaiting federal government approval) and the UK's Data Protection Act 1998.

4.25 Summary

Chapter four described the details of the research methodology, which included justifications for utilising the qualitative, eclectic case study, and pragmatism as the underpinning philosophical stance. Additionally, it highlighted the criteria for choosing both case organisations and participants for the research.

Generally, there seems to be no definitive research quality assessment framework (particularly in qualitative studies). This is because studies are from different epistemological and ontological positions. However, there are guidelines given by renowned authors (e.g., Lincoln and Guba 1985) that can be used by researchers in the various fields (specific to their needs) to make their work acceptable and influential in the research community. Essentially, the set quality guidelines need to consider the entire process and the products. Also, it is important to recognise the uniqueness of an individual study when identifying and assessing quality in a study. This was considered of paramount importance in

this study. Consequently, member-checking, reflexivity and audit trail were used as the quality criteria for the study.

The process of taking ethical considerations into account and seeking consent was followed and appropriately addressed in this study, and is fully documented in this chapter.

4.26 Conclusion

The study methodology was a qualitative approach with a case study research strategy. A multiple data source was involved (including numerical and textual data). Pragmatism was the underpinning philosophical stance. The next chapter presents overall guidance for the data analysis for this study. Additionally, it presents the analysis of data from organisation ‘A’.

PART FOUR: DATA ANALYSIS AND PRESENTATION AND DISCUSSION OF FINDINGS

CHAPTER FIVE

DATA ANALYSIS: OVERALL SCHEDULE AND PRESENTATION OF DATA FROM ORGANISATION 'A'

5.1 Introduction

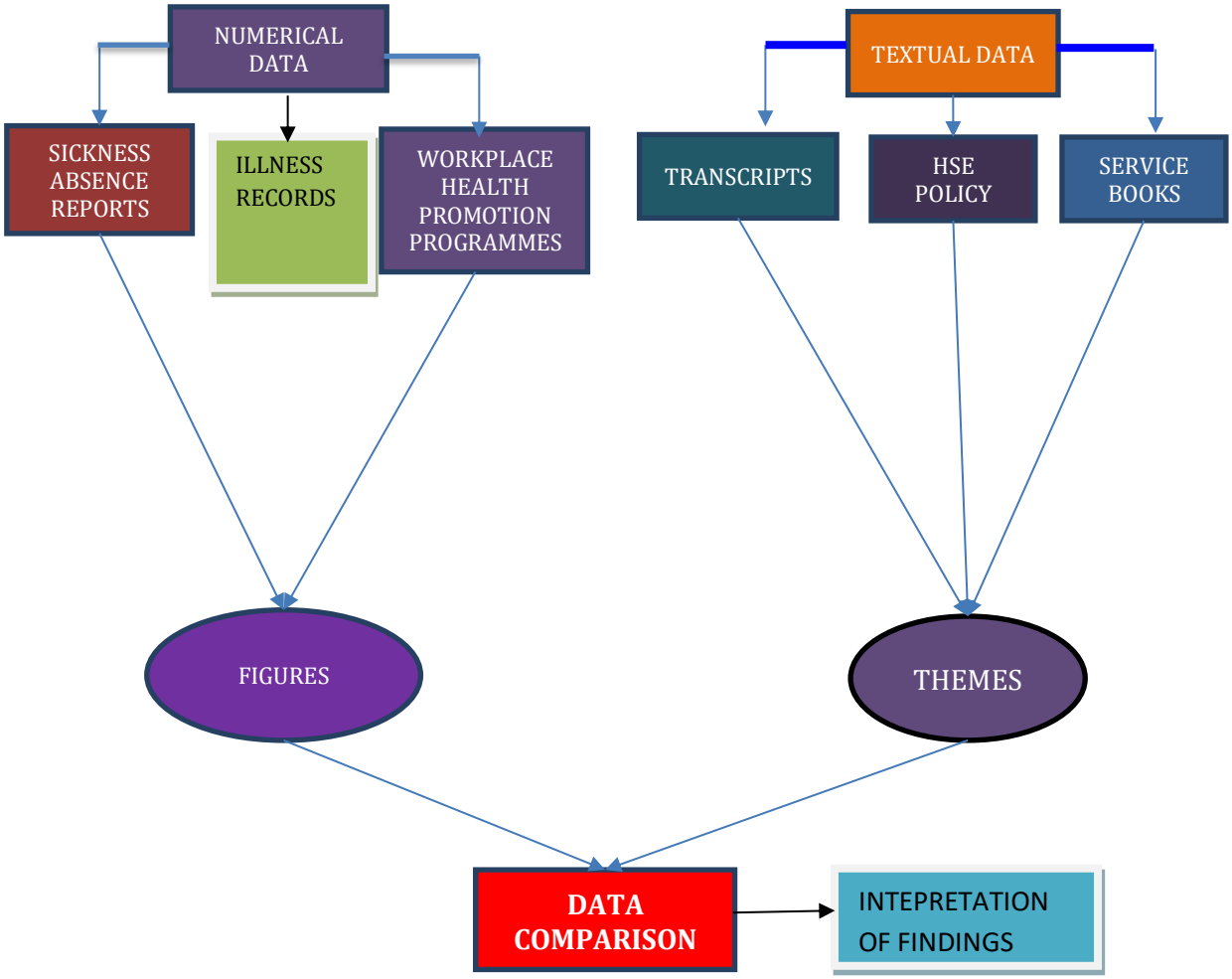
This chapter and the next (chapters five and six) present the overall schedule of data analysis. The analysis is directed at answering two research questions (section 1.4) to determine the (a) contributions of non-health, corporate, transnational healthy organisations to combating malaria and 'other diseases' at work, and (b) efforts made by these organisations to ensure gender equality in health matters at work. The answers to these explored the overall influence of case organisations in the achievement of the MDGs in Nigeria.

In analysing the findings, numerical data are first presented, followed by textual data. Sources of data for numerical components included occupational health and clinic attendance records, and relevant human resources records. There were three sources of textual data: interview transcripts, case organisations' service books and HSE policy documents. These were thematically analysed. Section 4.21 outlined details and steps followed during the data analysis. Transcripts from one-to-one interviews (organisation 'A' – 22 interviewees, and organisation 'B' – 13 interviewees), workplace service books and HSE policies went through the key stages of thematic analysis. The first step involved reading through the textual data repeatedly for familiarisation. This allowed code generation (appendix 6 shows the generated nodes), subcategorisation, categorisation, development of sub-themes, theme searching, review and theme naming. Initially there were eight major sub-themes, which were then refined into four themes, following further reviews. The process was intended to answer the research questions (section 1.4). Table 9, below, outlines and summarises the generated themes and sub-themes from the three qualitative (textual) data sources mentioned above.

Table 9: Themes and sub-themes from the qualitative data.

Themes	Sub-themes
Disease prevention and eradication	Proactive health measures Reactive health measures
Health, wellbeing and participants	Healthy lifestyle Participant health status WHPPs experienced WHPPs preferred
Gender and health	Men's health and wellbeing Women's health and wellbeing
Participants' feedback	Healthy workplace Improved staff morale Sustainability of programmes Improvement required

Figure 13: Flow diagram of data analysis at case organisations.



5.2 Summary of data sources for this study

(a) Policy documents: HSE policies and service books from organisations 'A' and 'B'

(b) Practice: record of workplace health promotion programmes from OH records and clinic attendance records reflecting the top three diagnoses, the sickness absence and mortality records

(c) Participants: 22 and 13 interview transcripts from organisations 'A' and 'B' respectively.

Finally, it is useful to note that comparison of data within and across the organisations is presented in section 7.2.

5.3 Data analysis: presentation and analysis of numerical and textual data rom organisation 'A'

5.3.1 Numerical data

The following paragraphs present the analysis of numerical data from organisation 'A'.

Organisation 'A' had a total staff strength of 2,692. Male employees constituted 75% of this population. The total number of females in the workforce was 665. There were 21 management staff, with male members occupying 17 of these positions. The clinic/occupational health attendance records showed malaria, hypercholesterolemia, obesity, hypertension and diabetes as the leading health challenges at organisation 'A'. Table 10, below, presents the predominant health challenges at organisation 'A'.

Table 10: Predominantly reported health challenges at organisation 'A'.

Health Parameters	**2012**	**2013**	**2014**
Plasmodiasis (malaria)	3,278 (25.4%)	4,888 (23.5%)	1,943 (21.8%)
High blood pressure	703 (5.5%)	3,292 (15.8%)	988 (11.1%)
High blood sugar	635 (4.9%)	100 (0.5%)	710 (8.0%)
Obesity	3,145 (24.4%)	4,788 (23.0%)	2,256 (25.2%)
High cholesterol (hypercholesterolemia)	4,298 (33.3%)	6,783 (32.6%)	2,551(28.6%)
Other	850 (6.6%)	969 (4.7%)	482 (5.6%)
Total	**12,909 (100%)**	**20,820 (100%)**	**8,930 (100%)**

Specifically and from table 10 above, the worksite clinic attendance records showed malaria (plasmodiasis) to be the leading CD health challenge reported by employees between 1st January 2012 and 31st December 2014. However, the

results show a decline between 2012 and 2014, with the highest recorded percentage in 2012 accounting for a quarter (approximately) of all health complaints or risk factors.

Among the NCDs or risk factors, the most recorded health risk was high cholesterol. This was followed by obesity (documented to be highest in 2014), constituting 25.2% of recorded CVDs/risk factors at organisation 'A', followed by 24.4% in 2012 and 23% in 2013. Next to obesity is high blood pressure, recorded to be highest in 2013, constituting 15.8% of total health complaints, followed by 11.1% in 2014. The lowest was in 2012, constituting 5.5% of annual health complaints. High blood sugar level accounted for 8.0% of annual health complaints in 2014 (the highest in the three years under review). This was followed by 4.9% in 2012. The lowest was in 2013, recording 0.5%. Other health risks and complaints (including gastroenteritis and respiratory tract infections) accounted for 6.6% in 2012, 4.7% in 2013 and 5.6% in 2014.

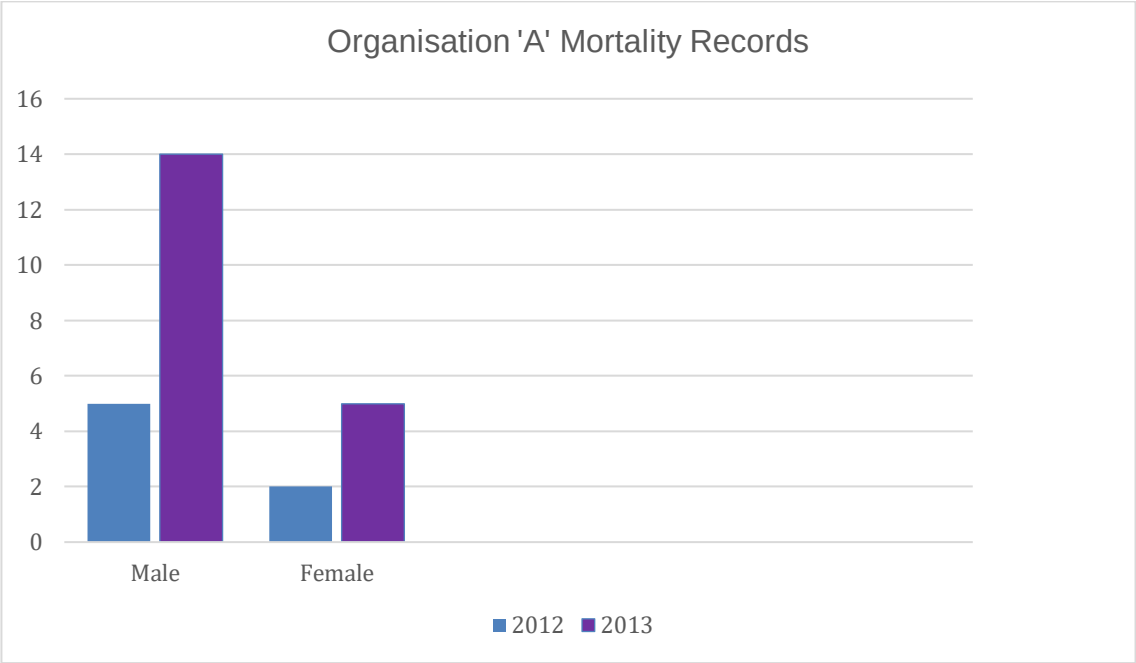
The analysis of annual sickness absence of employees by gender distribution is presented in table 11. There were more sickness absence reports among male employees compared to female employees. This result cuts across the entire period under review (2012 – 2014). It shows a progressive annual increment in sickness absence for males and a decline among females. Table 11, below, summarises this report.

Table 11: Sickness absence by gender distribution at organisation 'A'.

Gender	**2012**	**2013**	**2014**
Male	9,080 – 69%	16,614 – 73%	8,056 – 81%
Female	4,079 – 31%	6,145 – 27%	1,890 – 19%

Also, the recorded mortality following illnesses was seven in 2012, 19 in 2013 and none in 2014. Two of the recorded deaths involved females in 2012 and five in 2013.

Figure 14: The annual mortality records of employees 2012 – 2014 at organisation ‘A’.



5.3.1.1 The workplace health promotion programme at Organisation ‘A’

Information gathered from the occupational health records revealed the implementation of varied WHPPs at organisation ‘A’. Table 12, below, shows the various forms of workplace health promotion programmes organised for the workforce at organisation ‘A’.

Table 12: Frequencies of workplace health promotion programmes at organisation 'A'.

Year	2012	2013	2014	Remark
Programme				
Annual health screening	X	X	X	Conducted once a year during the study period
Health sensitisation on dust	X	X	X	Conducted once a year during the study period
Sensitisation on workplace hazards – rodents	x(3)	x(2)	x(4)	Conducted a minimum of twice a year
Sensitisation on healthy eating	X	-	-	Conducted once during the study period
Sensitisation on fitness club activities	X	-	X	Conducted twice during the study period
Sensitisation on SARS	-	X	-	Conducted once during the study period
World Day for Safety and Health	X	-	X	Conducted twice during the study period
Roll Back Malaria programme	X	-	X	Conducted twice during the study period
Breast/cervical cancer awareness programme	X	-	-	Conducted once during the study period
General health and wellbeing at work	X	X	-	Conducted twice during the study period
First aid at work	X	-	-	Conducted once during the study period
Ebola sensitisation	-	-	x(4)	Conducted four times in the epidemic year
Prostate health	-	-	X	Conducted once during the study period
Sensitisation on fumigation	-	X	-	Conducted once during the study period
Daily individual employee counselling	As required	As required	As required	>10 employees/day were health educated/counselled on need base

Table 12 shows inconsistency in the WHPPs, with annual health screening and sensitisation on dust occurring at an average frequency of once per year during

the period under review. The programme with the highest frequency outside the daily health counselling of employees was the sensitisation on rodents. The programme was carried out throughout the study years, with a minimum frequency of twice in a year. Sensitisation on prevention of malaria disease occurred on average of once a year. However, there was no record of this programme in 2013. Ebola sensitisation occurred four times in 2014 only at a period when there was a global epidemic of this disease. General sensitisation on healthy eating and physical fitness occurred only once and twice respectively during the period under review.

In summary, the numerical data analysed comprised common health challenges at organisation 'A', WHPPs, sickness absence and mortality records. Bar charts, percentages and tables were descriptive statistics utilised for their analysis. Malaria tops the list of CDs, while hypercholesterolemia (a major CVD risk) tops that of NCDs/risk factors. Varied WHPPs were carried out but were inadequate in frequency to tackle the reported health challenges at this organisation. There were records of deaths among male and female employees during the review period, with the exception of the last year with no record. Sickness absence was increasing for males but reducing for females during the period under review. Subsequent paragraphs highlight the textual data.

5.3.2 Textual data

There are three parts to the analysis of the textual data. The first part presents the findings from the 22 interviewees (interview transcripts). The second part is the analysis of the service books (section 5.3.2.2), and the third part presents the analysis of the HSE policy document of organisation 'A' (section 5.3.2.3).

Each of these textual data sets (interview transcripts, organisational service books and HSE policy documents) from the case organisations went through key stages of the thematic analysis. These stages include reading through the textual data several times for familiarisation purpose, followed by initial code generation (see appendix 6 for the generated nodes), theme searching, review and theme naming. There were initial sub-themes followed by the generation of four overall themes emanating from the interview transcripts, organisational service books and HSE policies.

Prior to the presentation of these three parts of the analysis (from case organisations), the characteristics of the 22 interviewees (study participants) at organisation ‘A’ are presented in table 11, below (those of the participants at ‘B’ are in table 16). These characteristics include participants’ divisions, gender and geopolitical zones, among others. The diverse characteristics enabled the sharing of lived experiences by participants (from different contexts) on their involvements in the WHPPs and similar initiatives (including gender and health specific ones).

Table13: Characteristics of interviewees at organisation 'A'.

Participants	Position held	Division	Sex	Length of service (years)	Length of stay at location (years)	Geopolitical origin
AP1	Head	Business	Female	16	15	South East
AP2	Secretary	Business	Male	23	6	South South
AP3	Head	Procurement	Male	13	2.5	North Central
AP4	Head	Human Resources	Male	14	14	North East
AP5	Head	Finance	Male	20	2	North West
AP6	Secretary	Engineering	Female	14	9	North Central
AP7	Secretary	Human Resources	Female	21	7	South West
AP8	Head	Physical Planning and Development	Male	23	7	North East
AP9	Head	Marine	Male	13	6	South South
AP10	Secretary	Audit	Male	13	5	South West
AP11	Secretary	Security	Female	12	10	South West
AP12	Secretary	Service Improvement	Female	12	10	North East
AP13	Secretary	Legal	Female	14	9	South South
AP14	Secretary	Fire & Rescue	Female	15	4	South East
AP15	Secretary	HSE	Male	27	13	South East
AP16	Secretary	Administration	Female	23	11	South West
AP17	Secretary	Public Affairs	Male	19	11	South West
AP18	Secretary	Procurement	Female	19	7	South West
AP19	Secretary	Marine	Female	14	9	North Central
AP20	Head	Special Duties	Female	27	22	South West
AP21	Head	Pension service	Male	18	10	North Central
AP22	Secretary	Pension Service	Female	15	4	South South

The chart below (figure 15) reflects the gender distribution of study participants at organisation 'A'.

Figure 15: Gender distribution of study participants at organisation 'A'.

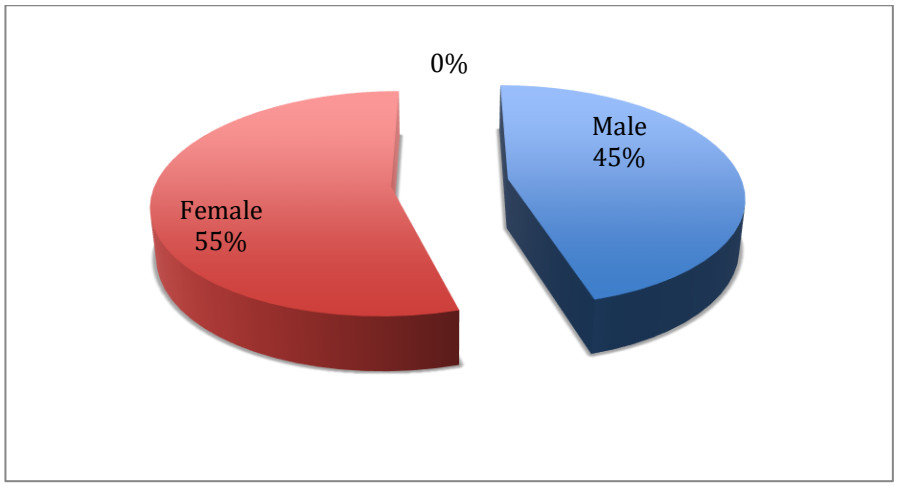


Figure 15, above, shows that 55% of study participants are females and 45% are males. The subsequent paragraphs give a detailed presentation of the qualitative data including the different stages of thematic analysis.

5.3.2.1. Part one: Interview transcripts

Eight major categories, derived from 22 interview transcripts, were regrouped under eight sub-themes and summarised as four themes in table 9. The categorisations from the 22 interview transcripts are presented below with excerpts from these data.

Category 1: Health, wellbeing and safety (HWS): arrangements and attention

Most of the participants made comments that indicated robust and effective arrangements for HWS at organisation 'A'. The narrative accounts of the arrangements were mostly positive; however, the participants used different words and contexts to describe the situation. Some of the comments relating to these are quoted below. For example, the head of the Pension division, a male from the North Central geopolitical zone of the country who had served at the study location for 10 years, expressed the following:

> In terms of arrangements and structure, the health and safety of 'A' is in order and in line with the international best practice. (AP21)

As far as this participant was concerned, ‘A’ is performing at its optimal best, determined by measuring the HWS accomplishment against international best practice, as this is the ultimate standard.

Also, the head of the Human Resources division (male, from the North East region), who had worked at the study location for 14 years, was able to relate the success of HWS arrangements to the structure put in place by ‘A’s management:

> I can gladly say that one of the best achievements of this management is the HSE performance. (AP4)

Additionally, the head of the Finance division, a male from the North West region, who had worked for two years at the study location, used the level of support that employees enjoy (plus the welfare package) as determinant factors or successful indices for HWS performance at ‘A’:

> Generally, I could say that the staff enjoy a high level of welfare and wellbeing support, and support for their health and safety. (AP5)

Moreover, the ability to access assured competent HWS professionals was what convinced the Marine division secretary (a female from the North Central region, who had worked at the study location for nine years) to positively acknowledge organisation ‘A’s HWS arrangements. This may not be guaranteed in appreciable numbers of private health organisations in Nigeria. They mostly employ poorly trained or unqualified and non-registered health staff in order to save costs; trained professionals get higher pay. In the participant’s words,

> ‘A’ helps the staff a lot … but you are sure that you get the true professionals taking care of your health, doctors and nurses included. (AP19)

A female secretary in the Security division, from the South West region, who had spent a decade at the study location, used another government job as a basis for measuring the outcome and effectiveness of the HWS of 'A'. This participant enumerated the different services/divisions that are provided with responsibilities to address HWS needs:

> … this organisation is a good place to work when you compare it with other government jobs…we have the Occupational Health, Safety and Environment division to prevent sickness here at work and at home. (AP11)

Also, a female secretary from the Legal division, and from the South South geopolitical zone, gave an account that strongly recognised the positive impact of HWS service on her personal health: "without the health and wellbeing programme, I probably would not have known that my blood pressure was rising to a dangerous level" (AP13). The ability of the occupational health team to identify the health challenges of this participant served as a major determinant factor. Also, the experience of an ergonomic assessment was used by a male secretary to the HSE division (from the South East geopolitical zone, with 13 years' service at the study location) to demonstrate satisfaction with HWS at organisation 'A'. This is in addition to some other things identified above by other respondents:

> …the HSE team have come to my office to assess my seat and ensure it is in the correct posture at my table as I work (ergonomic assessments). (AP15)

A female administrative secretary, from the South West region, who had served 11 years at the study location, used lack of clinic waiting time as a basis and a criterion of success for HWS performance at organisation 'A':

> …get free consultations without queuing up to see the doctor, which is what happens in public hospitals… (AP16)

A female secretary from the Procurement division, who had served seven years at the study location and was from South West Nigeria, highlighted the level of

training of HWS professionals as vital and a pointer towards successful achievement of HWS at organisation 'A':

> …HSE staff are sent to tertiary institutions, which are mostly abroad, to train at master's level in order to deliver a high-tech and best-practice level of care. (AP18)

The HSE policy is one of the crucial elements used to measure HWS performance by the divisional head of Special Duties. She is a female from the South West and had spent 22 years at the study location; she noted "We have HSE policy here and we recognise the need to have a healthy workforce for performance and the benefit of all" (AP20). Moreover, the ability to meet the essential needs of life through the arrangements and plans put in place by 'A' on HWS was what fascinated a female secretary at the Fire and Rescue division; she is from South East Nigeria and had spent four years at the study location:

> …there is a good welfare package for staff, it is a good place to work. With the package, the basic and essential needs of life can be met… (AP14)

Opportunities for time out at work or varied leave opportunities for employees was considered a determinant of success for HWS at organisation 'A'. The head of Finance from the North West region, with two years' service at the study location, gave the following account:

> Organisation 'A' has lots of support for staff welfare and when I needed time to rest, I was able to enjoy this opportunity. (AP5)

Contrary to the positive accounts of the effective and impressive occupational health, wellbeing and safety structure at organisation 'A', some of the participants gave negative and dissatisfied accounts. As a result, some participants, including a male secretary from the Audit division (from South West Nigeria, who had spent five years at the study location), identified areas for improvement as follows:

> That department they call occupational health or HSE is trying but they need to do more things for us… you can see that too many people are in this office, very tight together with no free space… (AP10)

This comment was made by this participant because of the current repair and renovation of the main headquarters of organisation 'A', which harbours an appreciable number of employees. This has led to significant displacement of staff and the situation is quite challenging and has derailed it from following best practice for health and safety. However, some of the employees still have access to suitable offices/workstations, as they were relocated to another building not too far from the main headquarters; but most remain in the building while the renovation and repairs are taking place.

Additionally, the head of the Marine division, a male from the South South region with six years' service at the study location, shared his experience thus:

> …imagine – for management to allow major repairs to be carried out during office hours is very frustrating to staff, including me. Is it the noise or the dust you want to talk about (exclaimed)? (AP9)

The approach to work by some departments was a major concern and a source of dissatisfaction in a participant's account of HWS at organisation 'A'. The following excerpts were taken from the account given by the head of the Pension Service division, a male from the North Central zone with 10 years' service at the study location:

> Some of the activities that are carried out to ensure HSW are executed in a ridiculous manner. I will give two instances. As you look round, here (pointing) you can see stacks of old documents that constitute various forms of hazard including fire, and rodent and cockroach infestations. The HSE team were contacted and they wrote their report, including the urgent relocation of the office or provision of emergency storage, but since then there has been no action. What baffles me is when X department wants to fumigate based on HSE recommendations – they do that without waiting for the work to finish. The type of chemicals being used has caused some of our staff to develop asthma while some have experienced exacerbation of symptoms…things are not so encouraging at all …office arrangements and congestion of staff due to the renovation project of the 'A' building …the offices are so small compared with the number of people using the space… (AP21)

Category 2: Health, wellbeing and safety (HWS): employees and performance

Excerpts reflecting the influence of the HWS plan on employees and performance at organisation 'A' are highlighted below. For instance, the secretary to the Fire and Rescue department (from the South East geopolitical zone, who had worked for four years at the study location) recounted the following:

> I feel it is encouraging for the workers to have a good welfare package and friendly colleagues. Also, it is a morale booster because of the departments dedicated to deal with health, safety and wellbeing. (AP14)

The comment signifies the fulfilment of employees' needs through the health and welfare package provided at organisation 'A'. Some of the participants made it clear that the arrangements have encouraged employees to be dedicated and committed to their functions, as noted by the secretary to the Procurement division (a female from South Western Nigeria with seven years' service at the study location):

> … I will say it is a morale boost for staff, and it has encouraged us to put our best into the organisation. (AP18)

Also, the periodic health sensitisation of staff was among the crucial effects of HWS arrangements, as recognised by a female administrative secretary from South Western Nigeria with 11 years' service at the study location:

> …useful and relevant activities on health and wellbeing carried out by the occupational health professionals for the purpose of health awareness and sensitisation… (AP16)

The training and arrangements for the 'first responder' within organisation 'A' were a major consideration of positive ratings for the HWS plan identified by the head of the Human Resources division (a male from the North East region with 14 years' service at the study location):

> There are trained first-aiders in each office with the kits allocated to individuals and offices…I can say that the staff's morale is very high here

> in this organisation…and I think 'A's performance keeps improving based on the available information. (AP4)

Nigeria (especially Lagos) is notorious for heavy traffic, partly because of the volume of cars, restricted road networks and bad or poorly maintained roads. When accidents or incidents occur at work and require prompt and immediate care, it could be challenging to access the closest medical facility (especially outside office hours). This is extra challenging for divisions/departments operating a 24-hour service (e.g., fire service and security personnel). Training and availability of first-aiders have a significant impact in emergencies when access to medical services is delayed. This explains the significance of the account given by AP4.

Also, the free health consultation and counselling for employees were strategic and considered a landmark and a good indicator of the HWS plan and effective performance, as acknowledged by the head of the Finance division (male, from the North West zone, who had spent two years at the study location):

> … generally, I could say that the staff enjoy a high level of support for welfare and wellbeing… staff enjoy daily free health counselling at the OH unit without prior booking and there is free medication in a situation where they are sick. (AP5)

In contrast, some of the dissatisfying effects of the HWS arrangements, as narrated by the head of Physical Planning and Development (a male from the North East zone with seven years' service at the study location), include the following:

> …the current situation where many workers are put in one office (overcrowding) is demoralising for staff and their wellbeing… (AP8)

Category 3: Health, wellbeing and safety (HWS): plan and organisation

The secretary to the HSE division (a male from the South East region with 13 years' service at the study location) noted that organisation 'A' is reaping benefits from the influence of its good HWS plan:

> The organisation's productivity has improved in the last few years too. Although it may not be so significant, but there is an increment in job performance. (AP15)

Additionally, the head of the Special Duties division (a female from the South West area with 22 years' experience at the study location) explained that the increased profits at organisation 'A' were the result of its HWS plan:

> As for the organisation, we have seen progressive increments yearly; I will say that to a great extent the arrangements have encouraged the staff to put in their best as well. (AP20)

In contrast, the head of the Pension Service division (a male from the North Central region with 10 years' service at the study location) expressed his grievances over the HWS service at organisation 'A'. His office was affected in the renovation and repair of the organisation's main building. The account given was as follows:

> …there is something wrong with the current arrangements, which leads to the inefficiency of responsible departments. (AP21)

Others include excerpts from the secretary to the Pension division (a female from the South South area with four years' service at the study location, who developed asthma following the use of chemicals for fumigation), who described job constraints from a different perspective: "If there is no seating or workstation or if you keep falling sick as a result of congestion and inappropriate intervention, what can you do…you know"? (AP22).

Category 4: Workplace health promotion programmes (WHPPs): list and feedback

Participants enumerated various health sensitisation programmes (WHPPs), some of which are highlighted below.

<u>Subcategory: List of WHPPs:</u>

The secretary to the Marine division (a female from North Central Nigeria with nine years' service at the study location) said:

> I have participated in all of the sensitisations, such as Roll Back Malaria, women's health programme, annual health check, Ebola virus disease, and some that I cannot remember now. (AP19)

Furthermore, the head of the Marine division (a male from the South South region of the country with six years' service at the study location) also experienced a male-gender-specific programme: "the annual health screening", "the men, work and wellbeing sensitisation", "Ebola virus disease" and "Roll Back Malaria" sensitisation programmes; those are the ones I can remember for now. (AP9)

From the account given by the secretary to the Business division (a male from South South Nigeria with six years' service at the study location), it is also clear that rewards and useful health kits augment participation and potential adoption of healthy behaviour, as demonstrated below:

> Umm hmm, yes, this annual health check where they tell us if there is sugar in our blood and we do some exercise and they gave us a T-shirt. There is another one they call Roll Back Malaria. They gave us mosquito nets. There is one where they tell us how to do first aid at work and at home. (AP2)

In particular, this participant noted that the insecticide-treated nets were given to participant employees. Another recalled partaking in a healthy eating programme in addition to the previously listed workplace health promotion programmes (WHPPs).

Also, the secretary to the Human Resources division (a female from South West Nigeria with seven years' service at the study location) noted "the ones I can remember are the annual health screening programme, malaria (Roll Back Malaria), the fruit and nutrition education fair, Ebola virus disease prevention and daily counselling services" (AP7).

Subcategory: Workplace health promotion programme (WHPP) feedback

Virtually all the respondents had a positive and blameless account of the WHPPs (except AP1, the head of the Business division, and AP21, the head of the Pension Service division). Samples of positive accounts are presented below.

The secretary from the Legal division (a female from the South South region with nine years' service at the study location) acknowledged the importance of WHPPs, which have assisted her in discovering her potential risk of heart disease:

> Otherwise, without the health and wellbeing programme, I probably would not have known that my blood pressure was rising to a dangerous level. (AP13)

Also, the head of the Procurement division (male and a North Central indegene with two and a half years' service at the study location) said the following:

> Most of the services rendered are eye-openers for a lot of staff! Most people were dying in silence and not knowing what they were harbouring in their body before…People are more aware of issues regarding their wellbeing and health… (AP3)

The secretary to the Fire and Rescue division (female and a South East indigene with four years' service at the study location) included the following in her account:

> …the support, counselling service and sensitisation from occupational health about diet, weight and cholesterol control have helped me greatly… (AP14)

In contrast, the head of the Pension division (a male from the North Central zone with 10 years' service at the study location) felt that the current renovation of the work environment had adversely affected the success of the WHPPs:

> …this kind of work environment we are in would not enable such programmes to be impactful. (AP21)

However, a secretary from the HSE division (a male from South East Nigeria with 13 years' service at the study location) felt that the WHPPs had not adequately met the needs of men:

> The organising departments are trying but they could organise more programmes to enlighten men about their health. Most of the programmes

> have always been for women, like cervical and breast cancer. There is a need for more sensitisation on things like prostate cancer among men. (AP15)

Category 5: Participants, health and organisation

Subcategory: Reported health issues

Participant employees gave general and individual accounts regarding the health situation of the workforce. The secretary to the Service Improvement division, a female from North East Nigeria, who had been at the study location for 10 years, noted that "People hardly reported sick again, which used to be a trend in the past five years… especially with the effective functioning of the HSE division" (AP12).

The secretary to the Marine division (a female from the North Central region with nine years' service at the study location) noted that "My health is better now, I have lost about 10 kg in one year as I have started cutting down on cholesterol, increased my vegetable intake, and do exercise sometimes, although this is not regular because it is always very late before I get home because of traffic" (AP19).

Furthermore, the head of Human Resources (a male from North East Nigeria with 14 years' service at the study location) expressed the following:

> My health has been quite good during this time (recently) although my major problem is malaria. (AP4)

This participant still acknowledged an issue with malaria, despite expressing overall satisfaction with his health. Also, the secretary to the Service Improvement division (female and a North East indigene with 10 years' service at the study location) stated that "My health situation is good through following the experts' advice" (AP12). Similarly, the head of Procurement rated his general health: "If I am to rate my general health in the past three years, I give myself 90%, which I consider an excellent rate". (AP3)

In contrast, some of the participants, including the head of the Business division (a female from South East Nigeria with 15years' service at the study location), expressed dissatisfying experiences regarding their general health: "It has been

awful. I have been in and out of the hospital… I had to travel out self-sponsored to get further treatment for my patchy skin… (interruption: she opened her long-sleeved shirt to show her arms and turned round to show her neck)" (AP1). Similarly**,** the secretary to the legal division (female and a South South indigene with nine years' service at the study location) gave a personal account:

> …very terrible! I developed asthma from an indiscriminate fumigation process, all in an attempt to kill rats and cockroaches. I have been having frequent time off from work due to sickness absence …through the annual health check about five years ago, it was discovered that my blood pressure was going up. I was advised on diet and some medication was given to me at the clinic. You know, the work pressure is very high. Sometimes we close very late and before you get home, because of the Ikorodu road traffic, it is very challenging. So, all these stresses put together make things challenging and difficult. (AP13)

Also, the head of the Finance division (a male from North West Nigeria with two years' service at the study location) experienced stress as the key health concern:

> My major challenge is stress, although I have malaria sometimes. The traffic situation to work is bad, and talking about inconsistency with the NEPA (the participant meant National Electric Power Authority), you hardly have light (electricity) to sleep at night. Most of the time, I have to run a generator, which is associated with its noise. (AP5)

Moreover, the secretary to the Audit division mentioned he is on diabetes medication:

> I take medicine for diabetes and I follow the advice at the clinic, and the OH people, they tell me a lot of things that are useful for me. Sometimes I get cough, catarrh and malaria. (AP10)

Category 6: Workplace health promotion programmes (WHPPs) and healthy lifestyles

Participants expressed various beneficial effects of the WHPPs on their personal lifestyle: for example, the secretary to the Marine division (a female from the North

Central area of the country with nine years' service at the study location) noted that:

> My health is better now, I have lost about 10 kg in one year as I have started cutting down on cholesterol, increased my vegetable intake, and do exercise sometimes, although this is not regular because it is always very late before I get home because of traffic. (AP19)

Similarly, the head of the Human Resources division (a male from North East Nigeria with 14 years' service at the study location) acknowledged that employees were more aware of issues concerning their wellbeing and health.

> In my office, I can see fellow staff try to follow the 'healthy' eating and drinking. These kinds of programme make people try to come to the office even when they are sick…because they know there are free options available to help them resolve their health issues. (AP4)

In summary, one of the participants, the head of the Finance division (a male from North West Nigeria with two years' service at the study location) described the effects of the WHPPs experienced on work–life balance thus:

> They have all assisted me to adopt a work–life balance. Especially at a time when the stress was quite overwhelming – I sought the counselling service and had follow-up appointments, which were quite useful. (AP5)

Subcategory: Preferred workplace health promotion programmes

Some of the employees were able to specify their preferences among the WHPPs, with the annual health screening as most preferred by participants. For instance, the secretary to the Audit division (a male from the South West region who had been at the study location for five years) noted that

> … the one where they check our body (annual health check), because many people don't have time to take care of their body… except when they are very sick and are almost dying before they can remember to go to the hospital for their body. (AP10)

Similarly, the secretary to the Security division, a female from South West Nigeria with 10 years' service at the study location, noted that "I find the annual test useful. It is from there that I know my cholesterol is at a high level. I followed the occupational health professionals' advice and I realise that it can be controlled to a normal range…" (AP11). Also, the head of the Procurement division (a male from the North Central zone with two and a half years' service at the study location) remarked "…I enjoy the annual health screening most…"(AP3). Furthermore, the secretary to the Procurement division, a female from the South West of the country with seven years' service at the study location, summarised the effects of WHPPs as having "assisted with sickness absence and the sudden death of employees … I particularly enjoyed the health screening" (AP18).

In contrast**,** one of the employees, the head of Human Resources (a male from North East Nigeria with 14 years' service at the study location), had a different preference:

> …It is the free daily consultation and counselling service. This makes life easy for people like me. I can just walk into their office to have health concerns clarified by trained professionals. (AP4)

In summary, all the WHPPs were found to be useful by participants. For example, the secretary to the Fire and Rescue division (a female from the South East zone with four years' service at the study location) acknowledged this as follows:

> I don't have anyone that is least. They are all useful in their own way. All of them have helped greatly in their way. (AP14)

This view is supported by the head of Special Duties division, a female indigene of South West Nigeria with 22 years' service at the study location. She expressed the following:

> …these are good programmes, beneficial to the organisation and to the workforce in terms of positive effects so what negative comments…? Well, I don't have any. (AP20)

Category 7: Gender: health, equality and work

Sub-theme: Understanding of gender equality

When asked about the meaning or perception of gender equality, one of the participants responded as follows (excerpts from the head of the Human Resources division):

> Everybody is treated equally without bias to a particular sex group. This is what I understand it to mean. (AP4)

Thus, it gives the notion that a lack of bias in the treatment of either of the sexes is pertinent to equality for this participant. Similarly, the secretary to the Business division (a male from South South Nigeria with six years' service at the study location) explained it as follows:

> What it means is that the male and female staff are taken care of at work the same. Not favouritism, as some 'Oga' (a head of division) will do for their people. When there is a promotion, some will give it to the person they know, which is not good. (AP2)

Also, the head of the Procurement division (a male from the North Central area, with two and a half years' service at the study location) said "It means equity and fairness between the male and the female workforce. Both have the same opportunity to grow and flourish in the workplace" (AP3).

Sub-theme: Understanding of equality at work

Participants were asked to express their opinion about equality at work. Most of them expressed similar assertions about this concept. For instance, a female secretary from the Engineering division and the North Central geopolitical zone (who had spent nine years at the study location) noted that "It is about equal opportunity for all at work" (AP6). Similarly, a male secretary from the Audit division and of South Western origin (who had been at the study location for five years) expressed it as "Everybody is equal" (AP10). Another female secretary from the Security division, a South West indigene (at the study location for 10 years), gave this account: "Everybody needs to be treated with respect and fairness" (AP11). Also, a female secretary from the Service Improvement division

and of the South East region (with ten years' service at the study location) responded by saying "Justice and equal pay for all at work" (AP12). Also, a female secretary from the Legal division, of South South Nigeria (with nine years' service at the study location), explained it as "Equal chances and attention for all employees" (AP13). Furthermore, a male secretary from the HSE division, of South Eastern Nigeria (with 13 years' service at the study location), simply put it as "Equity and fairness, if you like, you can add - to both sexes" (AP15). In the view of a female secretary from the Marine division and of the North Central area, "Everybody has equal rights without favouritism at work" (AP19). Likewise, another participant, the secretary to the Pension Service division (a female from the South South region with four years' service at the study location) described it as "Attending to the needs of all. This is what I mean, some departmental health and wellbeing issues are not well responded to, even when the HSE professionals have identified them" (AP22). This participant used this opportunity to express her feeling of inequality of treatment.

Sub-theme: Gender and policy

When asked if there is a need for gender-specific policy at work, all participants were positively disposed to it. The secretary to the Audit division, a male from the South West region with five years' service at the study location, affirmed this by saying "Yes, to help everybody since our bodies are not totally the same" (AP10).

Other comments on the need to have policy on gender issued at work included a statement by the head of the Marine division (a male from South South Nigeria with six years' service at the study location):

> I seriously think it is necessary and useful. After all, women and men are not the same, although you women will say what a man can do a woman can do better. There are significantly different physical features in us. (AP9)

The secretary to the Business division (a male from South South Nigeria with six years' service at the study location) affirmed this:

> It will be a better idea since not all our body parts are the same. Female workers here do enjoy time off when they give birth and they finish early.

> But there is nothing for us, the male staff. When our wives give birth, there is no time off. Some line managers may use their discretion and be able to give some time for nursing fathers on the naming ceremony day. (AP2)

This participant felt that male staff are not duly considered when they have a new baby due to lack of relevant policy, unlike their female counterparts, who have three months' maternity leave. Some of the participants specified that there is a policy in place that addresses female needs. For example, the head of the Finance division (a male from North West Nigeria with two years' service at the study location) expressed the potential benefits of having a policy in place to cater for the needs of both sexes:

> This will further improve performance if the sex group is specifically considered for wellbeing and safety purposes, although I am aware that 'A' has put in place some of those things in the service book, for instance maternity leave for mothers and early finishing time for nursing mothers. Each staff has a free health care service for up to four children and women (free medical consultation). (AP5)

Subcategory: Gender needs and participants: A question was asked to determine whether the gender needs of employees were met. Some of the participants noted that their gender needs were met by the HWS arrangements. For example, the secretary to the Marine division (a female from the North Central zone with nine years' service at the study location) stated that:

> I can say yes because I have seen those organising programmes for both male and female workers. (AP19)

Also, the head of the Human Resources division (a male from North East Nigeria with 14 years' service at the study location) noted that "Most of the programmes were actually relevant for both sexes. This is why I feel there is fairness for the two gender groups" (AP4). Others, like the secretary to the Audit division (a male from South West Nigeria with five years' service at the study location) and that of the Business division (a male from the South South zone with six years' service at the study location), gave positive accounts of how their gender needs were met following the implemented WHPPs. For example, the secretary to the Audit

division remarked “I think they are trying. Sometimes, they do a programme for men and sometimes for women and sometimes for everybody. They encourage everyone to participate” (AP10).

Additionally, the secretary to the Business division affirmed that “the other day, they gathered women to tell them about cervical cancer. Another time, they told us about prostate cancer. These are useful, and benefit men and women” (AP2).

Furthermore, the head of the Finance division (a male from the North West region with two years’ service at the study location) recalled “I recently benefited from a lecture organised by OH on prostate cancer and it was quite informative. We were told of the early warning signs, including a weak erection, frequent or hesitant urination, bloody semen” (AP5).

Category 8: Participants, feedback and recommendations

The comments/recommendations by participants addressed various issues, some of which were positive, while others were negative.

Subcategory: Renovation of the workplace

One of the employees, the secretary to the Administrative division and a female from South West Nigeria (with 11 years’ experience at the study location), acknowledged the constraints caused by the renovation. She hoped that it would be business as usual for the work environment on the completion of the renovation of the office building:

> Things have appeared to be unstable for about the last year due to the construction or renovation of the main headquarters. It is hoped that things will go back to normal when the construction is completed, or better than it was. (AP16)

Subcategory: Lift trapping

Lift trapping is a serious health and safety concern, and trappings were frequently happening with renovations and repairs going on at the main building of organisation ‘A’. The security secretary (a female from South West Nigeria with

10 years' service at the study location) stated the need to replace the lifts after a series of trappings and following several repairs:

> They need to properly service the lifts, for example, or replace the lifts with a new one. I have seen them repairing the lifts many times, yet they're still trapping people from time to time, so they are due for a change. (AP11)

Subcategory: Inspection, risk assessment and follow-up

Some of the participants highlighted the need for prompt hazard identification through regular workplace monitoring and follow-up on risk assessments. Examples are the head of the Finance division (a male from North West Nigeria with two years' service at the study location) and the secretary to the Audit division (a male from the South West zone) with five years' service at the study location. For instance, AP5 stated that

> I will not fail to say that the HSE team still need to improve their services, particularly as related to office inspections to identify potential hazards among workers. This needs to be on a regular basis and not one-off risk assessments, as you may call it, without follow-up. (AP5)

This participant called for regular and sustainable workplace hazard identification and risk management plan in order for these exercises to achieve the desired results. Similarly, the secretary to the Audit division noted:

> That department they call occupational health or HSE is trying. But they need to do more things for us. When you look around at our main office, things are not good there. We are just lucky that we are here in this building and you can see that too many people are in this office, very tight together with no free space … (AP10)

Subcategory: Management support and conducive work environment

The secretary to the Human Resources division (a female from South West Nigeria with seven years' service at the organisation of study) expressed the need for more support for the occupational health team that is directly responsible for the preventive or proactive health programmes at organisation 'A':

> The occupational health officers give lots of sensitisations but the 'A' management needs to put in place a conducive work environment that supports this …The HSE team has tried to provide support, but due to inadequate structural facilities their efforts are not pronounced as they ought to be. (AP7)

Also, the secretary to the Administrative division (a female from the South West region with 11 years' service at the study location) highlighted the need for more staffing, training and financial support to assist the occupational health team to effectively discharge its responsibilities. She remarked as follows:

> What I have to say is for more management support in terms of resources like finance and training and staffing to be able to have more of these programmes…(AP16)

Subcategory: WHPPs – continuity, increased frequency, and male-gender-specific programmes

Some of the participants noted the need for programme sustainability and increased frequency of health checks, as the existing schedule was considered inadequate. For example, the Marine secretary (a female from North Central Nigeria with nine years' service at the study location) declared:

> What I have to say is that they should continue to assist us to better take care of our health because we are all too busy to seek health services elsewhere because of the job and the traffic situation in Lagos. Also, it will be good if management can help to create a mini gym at work, it will greatly help us to establish regular exercise. (AP19)

In corroboration, the head of the Human Resources division (a male from North East Nigeria with 14 years' service at the study location) acknowledged the need to increase the frequency of health checks (for the employees) to four times a year instead of them being an annual event:

> The challenge I have heard people talk about is the inadequate frequency of some of these programmes…for example, the health screening

> exercise that is only done once a year needs to be quarterly in order to improve the wellbeing of staff. (AP4)

Similarly, one of the participants opined that more sensitisation programmes are required in order to achieve maximum benefits. The secretary to the Security division (a female from the South West region with 10 years' service at the study location) said:

> They are all okay but they are not doing enough, you know! We need more of those sensitisations. After all, we all wish to work and retire to collect our pension… (AP11)

Overall, these participants advocate for sustainability of the WHPP and other relevant HWS programmes.

Subcategory: HSE team, employees and identified risks

Some of the participants expressed the need to know the outcome of risk assessments or inspections carried out by the HSE team following reports to the management staff. For example, the secretary to the Business division (a male from South South Nigeria with six years' service at the study location) stated that "When they see bad things like that and report them to management, they need to let us know what the management is doing about it (exclaimed)" (AP2). In corroboration, the secretary to Human Resources (a female from the South West region with seven years' service at the study location) acknowledged that "they have done many risk assessments but we have yet to know the outcome and are hardly seeing any further action" (AP7).

Subcategory: ITNs and use

Some of the participants, for example the head of the Human Resources division (a male from North East Nigeria with 14 years' service at the study location), acknowledged not sleeping under the ITN due to non-conducive temperatures. He stated that:

> I was around when they organised a malaria prevention programme (Roll Back Malaria), they gave us mosquito nets (ITNs), but to be honest I don't like sleeping under it because of the heat. I only use it sometimes if the

light (electricity) is steady and I can put on the AC/fan to assist in cooling down the temperature. (AP4)

Subcategory: Support from management staff

The head of the Marine division (a male from South South Nigeria with six years' service) would like all management staff to grant full support at all times to WHPPs:

> …they need to be supported and encouraged with the necessary resources and adequate funding because prevention is better than cure! (AP9)

Subcategory: Specific needs

Some of the participants opined that "one size should not fit all". In view of this, efforts should also be directed at identifying and attending to the specific needs of each department/division at organisation 'A'. Currently, the attention given to addressing the health and wellbeing needs of various departments/divisions is non-specific. For example, the secretary to the Pension Service division (a female from the South South zone with four years' service at the study location) listed the areas that need management's attention:

> …well, there is a need to address the specific needs of departments like ours with congestion of staff in offices, stacked bags of documents and indiscriminate fumigations, and review the effects of chemicals with a view to using human-friendly chemicals. (AP22)

Subcategory: Enforcement power and the HSE team in critical HSW situations

Some participants highlighted the need to empower the HSE team to promptly address issues that are detrimental to the wellbeing of stakeholders in the workplace. In accordance with this notion, the head of the Pension Service division (a male from the North Central region with 10 years' service at the study location) noted that:

> I feel the HSE team has not been empowered enough to take urgent and immediate action where necessary. (AP21)

In corroboration, the secretary to the Pension Service division (a female from South South Nigeria with four years' service at the study location) declared:

> …the problem is that the responsible department, the HSE team, has limited power to act in situations like ours. Otherwise, this office was supposed to have been sealed until alternatives were provided or at least appropriate corrections are effected with the office arrangement and offices. (AP22)

In summary, based on the interview data at organisation 'A', most participants provided a positive account of health, wellbeing and safety (HWS) arrangements (a strategy to prevent and combat disease at work). Also, most (19) of the studied participants gave a positive account of the impacts of HWS arrangements on employees' health/wellbeing, work and performance. In contrast, three participants (AP9, AP10 and AP21) gave negative experiences/opinions of the arrangements for HWS. The negative opinions provided appeared to have arisen from the renovation of the structural facility at organisation 'A', leading to the disruption of activities in some offices during the data collection period. Furthermore, the disturbance affected appreciable numbers of staff, leading to overcrowding in some of the offices. Also, some of the negative accounts were due to the noise generated by the work activities and occasional trapping of personnel in the lifts (due to intermittent power outages caused by the renovation of offices). Other negative accounts resulted from poorly implemented workplace health protection programmes (such as the fumigation of offices before the official closing time, which has caused or aggravated asthma attacks for one of the participants).

Participants at organisation 'A' appreciated the implemented WHPPs, with a majority acknowledging the annual health assessment (one of the WHPPs) as having the best impact. However, one of the participants found the daily health counselling by occupational health professionals the most useful. Overall, health challenges reported by participant employees included malaria, stress, cough, catarrh, obesity, asthma, diabetes and high blood pressure.

On ensuring gender equality in health and wellbeing at work, only a male participant considered the WHPPs to be inadequate for males compared with females.

5.3.2.2 Part two: Service book

A significant part of the service book addresses health and wellbeing issues (including female-specific policies, e.g., for pregnant and nursing staff) of employees at organisation 'A'. These policies demonstrated a moderate level of commitment and support for staff, with, however, more emphasis on the female workforce. Three key subcategories emanated from the book and are discussed in the following sections:

Subcategory: Employee leave, health and wellbeing

Organisation 'A' has a robust policy on welfare and wellbeing matters for staff. These include necessary provisions for required time out of work, as indicated in the following paragraphs (from the 'A' service book):

- Annual leave: Leave will be granted at any time during the leave year.
- Incidental leave shall be granted to employees (as considered necessary).

Furthermore, the organisation has a policy to take care of employees' religious needs by making provision for those who wish to go on holy pilgrimage– Saudi Arabia or Israel. However, this will be deducted from their annual leave if not formally assigned (as government representative), as highlighted below:

- Leave for religious purposes: …shall use part or all of his annual leave for such purposes.

Moreover, there is provision for casual leave for any exigency as may occur to any employee, as explained below:

- Casual leave…an employee may occasionally be granted …five working days in a year.

Similarly, there is provision for sick employees to allow for rest and recovery:

- Sick leave: An employee who is absent from duty on the grounds of ill health not caused by his own fault or negligence, will, provided such absence is covered by a sickness certificate issued by a medical practitioner approved by the Authority, be regarded as absent on sick leave.

Subcategory: female employees and policy

Pregnant employees are not left out in the policies of organisation 'A'. Their needs were envisaged and catered for in the organisation's service book. However, although the provisions may be inadequate, the service book at least recognises the basic needs of pregnant workers. For instance:

> All married pregnant employees are entitled to a stretch of 12 weeks' maternity leave effective from the date of confinement with full pay.

Similarly, there is support for breastfeeding workers, as outlined below:

> Any female employee who is nursing a child shall be allowed to finish two hours before the official closing time every day…up to a maximum of six months from the date of resumption from maternity leave and upon presentation of the child's birth certificate.

Subcategory: Employees, family and health

Adequate provision and robust arrangements exist for reactive and curative health programmes for employees and family:

> Free medical/surgical treatment will be provided by the 'A's medical department or by the government medical service or under such other arrangements as may be made by 'A' from time to time.

Similarly, the organisation has a standing arrangement for medical evacuation where it deems it necessary. For instance:

> Any employee whose life is feared to be in danger, or whose ailment cannot be treated in the country, can receive medical treatment abroad if so recommended by the 'A' medical board…or approved by the Managing Director.

Also, in a situation where an employee's dependant requires overseas medical treatment, the organisation has a supporting policy for this, as stated below:

> 'A' shall provide the dependant with free travel and an accompanying parent with free travel and an estacode allowance for the approved duration of the treatment.

In summary, the workplace policies at organisation 'A' show support for employees. There is provision of various types of leave/absence (from work) granted to enable employees to address their important personal needs/commitments. This is with a view to meeting the health and wellbeing needs of staff (part of efforts to prevent and combat disease at work). Additionally, the policies include a reactive arrangement to address health challenges for employees and family, with a readiness to source medical care abroad where necessary.

Also, on meeting gender needs, there was a female-specific policy - maternity leave and early finishing for breastfeeding mothers at organisation 'A'. However, there was none for the male employees.

5.3.2.3. Part three: HSE policy

Subcategory: HSE policy's robustness and the achievement of a healthy workplace

Organisation 'A's HSE policy shows a good level and comprehensive commitment to the health, wellbeing and safety of all stakeholders, including employees, visitors and contractors, as outlined below:

> We will aggressively pursue effective management to ensure a good environment and the safety of our employees, contractors and concessionaires, minimise adverse environmental impacts and positively contribute to the communities in which we operate… Our main objective is to achieve zero harm to people and the environment.

Subcategory: HWS resources and line of responsibilities by stakeholders

The commitment and a clear line of responsibility for HWS by 'A' is highlighted below:

Ensure that all employees, contractors and concessionaires understand that working safely is a non-negotiableissue and that they are responsible for their own safety and the safety of those involved in port operations.

This policy clearly assigns safety responsibilities to all the stakeholders. Similarly, the next policy outlines the relevant resources needed for the achievement of HSE excellence:

- Provide employees with the capability, knowledge, motivation and resources necessary to achieve HSE excellence.

Subcategory: Management and evaluation of workplace HSE programmes

The following paragraphs outline the key management and evaluation areas/strategies:

- Measure and publish HSE performance reports and maintain open dialogue with contractors, concessionaires, stakeholder groups and host communities.

Similarly, the organisation has a policy that manages HSE at work with minimal negative impact on the surrounding environment, as presented below:

- Manage all projects, operations and processes in a way that protects safety and health and minimises theimpact on the environment.

In summary of this segment, the HSE policy showed a comprehensive arrangement directed at ensuring the health, wellbeing and safety of the workforce. It presented the commitment of organisation 'A', with clear-cut responsibilities for HWS.

Assessment of structural facilities in support of healthy lifestyle choices at work:

Presence of gym – Nil

Presence of canteen –Nil

5.4 Summary

In summary, the numerical data from organisation ‘A’ comprised records of common health challenges at organisation ‘A’, WHPPs, and sickness absence and mortality records. In analysing these data, bar/pie charts, percentages, frequencies and tables were utilised as descriptive statistical methods deployed for the study.

Also, from the interview data, more females consented to and participated in the study than males. Most of these participants provided a positive account of the health, wellbeing and safety (HWS) arrangements at organisation ‘A’, which is a form of strategy to prevent and combat disease at work. Also, most of the participants studied narrated a positive account regarding the impact made by the HWS arrangements for employees’ health/wellbeing and work performance. All participants appreciated the WHPPs, with the majority acknowledging annual health assessment (one of the WHPPs) as the intervention with the best impact among employees. However, one of the participants preferred and found most useful the daily health counselling (by occupational health professionals). In contrast, few participants gave a negative opinion of the arrangements (HWS). Most of the reasons provided arose from the renovation of the structural facility at organisation ‘A’, which caused disruption of activities in some offices during the data collection period. The disturbance affected appreciable numbers of staff, leading to overcrowding in some of the offices. Additionally, the noise generated by the work activities and also the occasional trapping of personnel in the lifts due to intermittent power outages were among the negative accounts. Other negative accounts resulted from poorly implemented workplace health protection programmes (such as the fumigation of offices before the official closing time, which caused asthma attacks for one of the participants). Overall, most of the health problems reported by employees were malaria, stress, cough, catarrh, obesity, asthma, diabetes and high blood pressure.

On ensuring gender equality in health and wellbeing at work, only a male participant considered this to be inadequate (for males compared with females).

Additionally, the policies presented (in the service book) highlighted organisation ‘A’s support for employees through provision of various types of leave/absence

(from work) to address important personal needs/commitments. This is with a view to meeting the health and wellbeing needs of staff (part of efforts to prevent and combat disease at work). Moreover, the policy included a reactive arrangement to address health challenges for employees and family, with a readiness to source medical care abroad (where necessary).

Furthermore, on gender equality in health at work, the leave extends to pregnant employees at the organisation, with provision for maternity leave and early finishing for nursing mothers. However, there was none (no paternity leave) for the male employees at organisation 'A'.

Finally, the organisation's HSE policy showed comprehensive arrangements directed at ensuring the health, wellbeing and safety of stakeholders. It presented a commitment to HWS with clear-cut responsibilities.

5.5 Conclusion

Analysis of data from organisation 'A' was presented using descriptive and thematic data analysis for numerical and textual data respectively. A data set comparison was done, which led to the interpretation of findings from organisation 'A'. The results show that organisation 'A' is still over burdened with both CDs and NCDs. Specifically, malaria tops the list of CDs, while hypercholesterolemia tops the NCDs. Records of relevant WHPPs (directed at predominant health challenges and CVD diseases/risks) exist but they were of inadequate frequency to tackle the menace of these diseases/risks. There were death records during the period under review, except in the last year (2014), when there were no records.

Gender inequality still persists, especially with more men employed than women, and also with more men at decision-making levels compared with women. However, sickness absence was higher for men than women and one man reported poor/inadequate attention to men's' health compared to women's.

Hence, due to inadequate policies and practices, organisation 'A' made an insufficient contribution to combating malaria and 'other diseases' and ensuring gender equality in health at work.

CHAPTER SIX

DATA ANALYSIS: ORGANISATION 'B'

6.1 Introduction

In line with efforts to achieve the aim of this study (section 1.3) and answer the research questions (section 1.4), this chapter is a follow-up to chapter five on data analysis and presentation. It follows the outlined schedule of presentation described in the previous chapter (section 5.1). The numerical data are first presented, followed by the textual data. Sources of numerical data included occupational health and workplace clinic records, and relevant human resources records. Sources for the textual data were the organisations' service books, HSE policies and interview transcripts. These were thematically analysed and grouped into three parts. Further details on the steps followed for the analysis of textual data were presented in section 5.1, while table 9 highlighted the emerging themes.

6.2 Numerical data

The total staff strength at organisation 'B' was 1,004, with female employees making up 3.8% of the staff. There were four management staff, of which one was a female.

Table 14: Predominantly reported health challenges at organisation 'B'.

Health complaints/risks	**2012**	**2013**	**2014**
Plasmodiasis (malaria)	731 (51.4%)	150 (30.7%)	770 (75.6%)
Upper Respiratory Tract Infection (URTI)	479 (33.7%)	96 (19.7%)	51 (5.0%)
Gastroenteritis	120 (8.4%)	162 (33.1%)	128 (12.6%)
Raised blood pressure	82 (5.8%)	74 (15.1%)	51 (5.0%)
Diabetes	0 (0%)	0 (0%)	0 (0%)
Other	10 (0.7%)	7 (1.4%)	19 (1.9%)
Total	1,422 (100%)	489 (100%)	1,019 (100%)

Malaria (plasmodiasis) topped the list of health complaints during the period of study (except in 2013 when gastroenteritis (a CD) topped the list of the recorded health complaints, recording 33.1%). The lowest-occurring incidence was in 2013 (30.7%), while the highest occurred in 2014 (75.6%). Upper respiratory tract infections (URTIs) were next to malaria among the predominant health complaints by employees of this organisation, with the highest incidence recorded in 2012 (33.7%). Raised blood pressure had the highest incidence of the NCDs in 2013 (15.1%). There were no record of diabetes during the period under review.

Furthermore, male staff recorded higher sickness absence during the period under review. However, no pattern was observed generally in the recorded absences during the study period. Table 15, below, highlights the sickness absence report for both male and female staff.

Table 15: Sickness absence by gender distribution at organisation 'B'

Gender	**2012**	**2013**	**2014**
Male	1481 – 89%	632 – 95%	1097 – 93%
Female	183 – 11%	33 – 5%	83 – 7%

Table 16: Frequencies of workplace health promotion programmes at organisation 'B'

Year	2012	2013	2014	Remark
Programme				
Annual health screening	X	X	X	Conducted once a year during the study period
Sensitisation on workplace hazards – rodents	x(10)	-	-	Conducted10times in 2012
Sensitisation on personal/environmental hygiene	x(5)	x(7)	x(3)	Conducted a minimum of three times a year
Sensitisation on healthy eating	x(14)	x(19)	x(8)	Conducted frequently every year during the study period
Sensitisation on fitness club activities	x(23)	x(17)	x(13)	Conducted frequently every year during the study period
Sensitisation on SARS	-	-	x(3)	Conducted three times in 2014 only
World Day for Safety and Health At work	x	X	X	Conducted once a year during the study period
Roll Back Malaria programme	x(5)	x(8)	x(3)	Carried out frequently every year during the study period
Breast/cervical cancer awareness programme	x(17)	x(11)	x(14)	Conducted frequently every year during the study period
General health at work and wellbeing	x(25)	x(14)	x(30)	Conducted frequently every year during the study period
First aid at work training	x	x(5)	x(9)	Conducted frequently every year during the study period except 2012
Ebola sensitisation	-	-	x(7)	Conducted in 2014 only
Prostate health	x(4)	x(7)	x(5)	Conducted frequently every year during the study period
Sensitisation on fumigation	-	x(2)	-	Conducted twice in 2013 only

Table 16 summarises the different health sensitisation programmes carried out at organisation ‘B’ from 2012 to 2014. Sensitisation directed at malaria prevention/control and healthy lifestyle choices (including fitness and healthy eating) occurred throughout the years of study and were among the most frequently organised programmes. Ebola sensitisation occurred seven times in 2014 alone, when there was a world epidemic of the disease.

In summary, malaria, one of the CD diseases remains top of the list of health challenges reported at organisation ‘B’. There was no record of significant level of NCDs at this organisation, rather there was more of CDs recorded.

On gender and health matters, no pattern was observed in the sickness absence records during the years under review. However, men experienced more sickness absence than women during this period. The WHPPs were quite frequent but more programmes are required in order to effectively deal with malaria disease at organisation ‘B’. Also, there were no recorded deaths during the period under review. Subsequent paragraphs highlight the textual data.

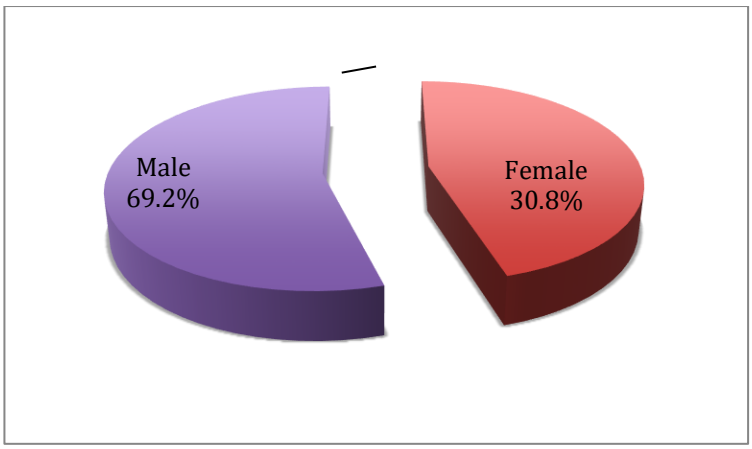
6.3 Textual data

There are three parts to this analysis. This first part presents findings from 13 interviewees, following the analysis of one-to-one interview transcripts. Prior to the presentation, table 17, below, highlights the characteristics of study participants. This includes participants’ divisions, genders and geopolitical zones, among others. The diverse characteristics enabled the sharing of lived experience from different contexts on workplace health and wellbeing issues (including workplace gender and health issues).

Table 17: Characteristics of study participants at Organisation 'B'

Participant's code	Position	Division	Sex	Length of service (years)	Length of stay at location (years)	Geopolitical origin
BP1	Head	Human Resources	Male	6	6	South West
BP2	Secretary	Human Resources	Female	6	6	North Central
BP3	Head	Operations	Male	4	4	South West
BP4	Head	Engineering	Male	5.5	5.5	South South
BP5	Officer	Engineering	Male	4	4	North East
BP6	Officer	Compensation	Female	8	8	South East
BP7	Head	Computer	Female	8	8	South West
BP8	Head	Procurement	Male	6	6	South West
BP9	Head	Commercial	Male	5	5	North West
BP10	Head	Budget Planning	Female	4	4	South West
BP11	Head	Gate	Male	8	8	South East
BP12	Officer	ICT	Male	6.5	6.5	South South
BP13	Officer	Finance	Male	5	5	North Central

Figure 16: Gender distribution of study participants at organisation 'B'



The above figure shows that male staff constituted 69.2% and female staff 30.8% of participants at organisation 'B'.

6.3.1. Part one: Analysis and presentation of 13 interview transcripts

Thirteen interview transcripts were thematically analysed under eight categories and four emerging themes. The categorisations and emerging themes are as presented in table 9 of chapter five.

Further detailed presentation of the interview transcripts is as highlighted below.

Category 1: Health, wellbeing and safety (HWS): arrangements and attention

All the staff interviewed gave positive accounts of their HWS experiences at organisation 'B'. Excerpts of responses in support of this understanding are presented below.

A female head of the Budget Planning division, from South West Nigeria, who had spent four years at the study location, noted that:

> Well, I will categorically tell you that all employees are made responsible and accountable in this respect. Health, wellbeing and safety are taken so seriously that violators are punished. Individual employees must attend the weekly health talk and the annual health checks. The canteen is free, with free medical care. The work environment competes with international best

> practice. So, you can see what I mean by this place being a rare and uncommon work environment in Nigeria. (BP10)

The above account acknowledges that organisation 'B' is an effective organisation with regard to HWS arrangements. Indicators of successful performance (as given by this participant) include free lunches and compulsory attendance of the weekly health sensitisation programme. In corroboration, the head of the Operations division (male) from South West Nigeria, who had spent four years at the study location, narrated a similar experience to point to the effectiveness of organisation 'B' regarding HWS affairs:

> Aaah, I must confess, we are well taken care of here. You can imagine, we are provided with free lunch, and you can count on your fingertips the number of organisations that provide that. Every week, we have a range of various health talks that educate us on common health problems around and how to prevent and tackle them. We have an on-site clinic to rescue workers if they suddenly fall ill at work…and outside working hours, there are hospital provisions for employees if they are ill at home. Workers have a choice of hospitals close to their homes… (BP3)

More and related experiences were shared by participant employees. The head of the Human Resources division (male), who had spent six years at the study location, stated that:

> As far as this organisation is concerned, health and safety are taken as a high priority. 'B' is a good place to be in terms of health and wellbeing. Staff get penalised if they don't abide by the safety and health rules here. So, it is not a joke. (BP1)

Also, a female secretary from the North Central zone, with six years' service at the study location, in the Human Resources division, acknowledged workplace HWS as strategic to business activities:

> It is a serious business in our organisation. Everyone has been well briefed and it has become a culture in this business. They tell us how important it is for us to stay safe and healthy for the benefit of their business and ourselves and our families… (BP2)

More positive and affirmative comments were made on the HWS at organisation 'B'. The divisional head of the gate security (a male from South East Nigeria), who had worked for eight years at the study location, affirmed that:

> 'B' is a very relaxing place. All staff are catered for. The management made a very effective plan to take care of everyone's health, welfare, wellbeing and safety. (BP11)

Similarly, a male officer from the ICT division, who had spent six and a half years at the study location and is an indigene of the South South geopolitical region of Nigeria, remarked that:

> We have a superb arrangement here. I am not sure if you can find many of this (like it) in this country… (BP12)

Furthermore, a male finance officer from the North Central region, who had spent five years at the study location, reported that:

> The arrangements here are really good, not just issues around health, wellbeing and safety but the overall organisation arrangements. This is because everybody is committed to their tasks here. (BP13)

The divisional head of Engineering (male) from South South Nigeria, who had spent five and a half years at the study location, referred to organisation 'B' as heaven when compared with a typical Nigerian organisation in terms of arrangements and services offered for HWS:

> This place is like heaven to work in because our top management recognises the interactions between health, productivity and life. (BP4)

Also, a male officer from the Engineering division, from North East Nigeria, with four years' service at the study location, viewed the workplace as an ideal home because of the HWS arrangements: "This place is like an ideal home because the arrangements ensure the best standard of health, wellbeing and safety in this organisation" (BP5).

Lastly, the divisional head of Procurement, a male from the South West region who had been at the study location for six years, commented thus:

> This organisation has a type of arrangement that gives employees a good sense of belonging. It makes workers feel at home and believe that someone cares for them. All the basic needs of life are taken care of to the best possible standards… (BP8)

This participant summarised all of the HWS activities at 'B' by noting that the basic needs of employees are proficiently dealt with, leading to fulfilling and accomplishing effects. It is noteworthy that none of the participants gave a mixed or contrary opinion on the effectiveness of or the efficient attention dedicated to HWS at organisation 'B'.

Category 2: Health, wellbeing and safety (HWS): performance and employees

Respondents gave varied accounts of the positive and satisfying impacts of HWS. The divisional head of the Commercial section, a male from the North West area with five years' service at the study location, noted that "the effect, as you can imagine, is progress for all. There is job satisfaction for employees" (BP9). This respondent acknowledged that the arrangements for HWS have resulted in the desired outcomes, both personally and for co-workers. A female secretary of the Human Resources division (an indigene of the North Central region with six years' service at the study location) expressed a similar observation, noting the encouraging effects on staff morale: "Aaah, it is a positive effect. The morale of staff is very good" (BP2). Similarly, the divisional head of Human Resources (a male from the South West region with six years' service at the study location) rated the perceived experience of the HWS arrangements as excellent. The following is in consideration of social amenities available in the workplace:

> If I am to rate my experience, I will give it excellent… because the staff know they have basic amenities like standard toilets with separate male/ and female facilities, high-quality meals served at the canteen. I am talking about the weekly health sensitisation for staff, which makes them feel highly valued, and health checks, the in-house temporary clinic… (BP1)

Similarly, an officer from the Finance division (a male from the North Central region with five years' service at the study location) clearly stated the resultant effects on workers' wellbeing:

> I will say, very pleasant effects on both employer and employees. Everyone is happy in a supportive, homely and relaxing atmosphere. (BP13)

In corroboration, an officer from the Engineering division (a male from North East Nigeria with four years' service at the study location) described the entire experience as a "very relaxing, healthy atmosphere, there is lots of support from colleagues and staff here" (BP5). Moreover, a female officer from the Compensation division (an indigene of South East Nigeria who had worked for eight years at the study location) also remarked that "the workers are pleased to work in a peaceful and very supportive work environment" (BP6).

This remark reflected the general consensus from all the participant employees. There were no reported unwarranted effects of HWS arrangements at organisation 'B' from any of the respondents.

Category 3: Health, wellbeing and safety (HWS): plan and organisation

Some of the employees remarked that organisation 'B' follows world-class standards regarding HWS. Presumably this means a positive image, reduced sickness absence and improved performance. The head of Budget Planning (a female from the South West region with four years' service at the organisation of study) noted that"…the work environment competes with the international best practice…" (BP10).

Similarly, the divisional head of Commercial (a male from the North West region with five years' service at the study location) affirmed that

> We have a world-class arrangement here… (BP9)

The secretary to the Human Resources division (a female from the North Central zone with six years' service at the study location) remarked that the provision of the required standard of HWS has raised employees' performance:

> All welfare amenities like toilets are of good standard… So, why would anyone not try to work hard in this kind of place? (BP2)

A similar observation was made by the head of the Computer division (a female from South West Nigeria, with eight years' service at the study location):

> I can tell you authoritatively that the staff are functioning at their best and things are working well with 'B'. Every year there has been an increase in productivity. (BP7)

Also, a male engineering officer from the North East zone with four years' service at the study location remarked that "workers are happy to do their tasks in an efficient manner considering the benefits they enjoy here" (BP5). This information shows that 'B' has sustained and improved performance and productivity. Moreover, a finance officer (a male from the North Central region with five years' service at the study location) testified that the level of attention, support and excellence in performance exists not only in workplace health, safety and wellbeing but in all other affairs within the organisation:

> The arrangements here are really good, not just issues around health, wellbeing and safety but the overall organisational arrangements. This is because everybody is committed to their tasks here. (BP13)

Category 4: Workplace health promotion programmes (WHPPs): list and feedback

Most of the participants noted the weekly health talk as the major sensitisation programme organised at their workplace. The programme addresses both contemporary health issues (e.g., Ebola, Lassa fever and swine flu) and day-to-day health issues (gastroenteritis, malaria fever and chronic health issues). Participants listed and commented on various health sensitisation programmes (WHPPs), some of which are highlighted below.

<u>Subcategory: List of workplace health promotion programmes</u>

The head of the Human Resources division (a male from the South West zone with six years' service at the study location) acknowledged that the "weekly health talk is good too" (BP1).

Similarly, a female officer from the South East area of Nigeria and of the Compensation division at organisation 'B' (who had spent eight years at the study location) remarked that:

> The Roll Back Malaria programme, where they gave us mosquito-treated nets, advice on different ways to prevent malaria…the annual health check where I discovered that my cholesterol was too high, Ebola virus disease prevention and first aid at home and at work. They taught us simple things to do in case of accidents to prevent any big health problems. I attended a talk on general personal and environmental hygiene, particularly for rodents and flies, cockroaches. This educated us on how to prevent Lassa fever and cholera. I remember there was a very comprehensive series of lectures on Ebola virus disease when many staff were so frightened. There were ones on malaria prevention and chronic health issues like diabetes and hypertension. Those are the ones I can remember for now. (BP6)

Also, the head of the Budget division (a female from South West Nigeria with four years' service at the study location) identified "regular weekly health sensitisation talks that have various dimensions, including stress management, diet and work–life balance, and the annual health screening" (BP10) as marks of success. Furthermore, and in support of this assertion, the head of Operations (a male from South West Nigeria with four years' service at the study location) listed WHPPs as including "diet and lifestyle, stress management, malaria prevention strategies, Ebola virus disease prevention, obesity and diabetes prevention, blood pressure and your health". (BP3)

Subcategory: WHPP and feedback

Participants found the WHPP highly useful and there were tremendous positive comments on the weekly health sensitisation programmes for staff. For example, the head of the Operations division (a male from South West Nigeria with four years' service at the study location) commented thus:

> Aaah, I must confess, that the weekly health talk is good too (with emphasis). I have learnt a lot here at work, which I have carried to my

> family. The HSE team are the ones in control of these talks. They are really good and educative. (BP3)

The head of the Human Resources division (a male from the South West region with six years' service at the study location) expressed that the weekly health education programme has helped the staff to have a caring work atmosphere:

> I am talking about the weekly health sensitisation for staff, which makes them feel highly valued, and health checks … (BP1)

Moreover, the head of the Computer division (a female from the South West zone with eight years' service at the study location) described the weekly health programmes as a great experience:

> I will say it has been a wonderful type of experience and of course arrangements … (BP7)

Similarly, the head of the Human Resources division (a male from the South West region with six years' service at the study location) elaborated on the positive psychological impact that such sensitisation programmes achieved during one of the deadly outbreaks:

> … (with) Ebola disease, …a series of programmes to calm us down and tell us what we needed to do to protect ourselves. They gave us information on how to avoid common diseases like diabetes and hypertension, and on hygiene and good diet. They also gave us mosquito nets. (BP1)

Furthermore, the secretary to the Human Resources division (a female from the North Central region with six years' service at the study location) remarked that the health sensitisation programmes were useful:

> The weekly health sensitisation programmes on cancer awareness, HIV/AIDs prevention … a good experience. (BP2)

<u>Subcategory: Participants, health and organisation</u>

There is a general notion about the health of the workforce at organisation 'B', described as 'optimal health for employees'. This is an outcome of efficient and

effective organisational structure (including HWS arrangements). Some of the experiences, as narrated by the divisional head of Commercial (a male from North West Nigeria with five years' service at the study location), affirmed that:

> staff hardly take sick leave or report sick, they are eager and happy to do their jobs with annual improvement in performance of the organisation. (BP9)

This information indicates reduced or rare sickness absence among staff. The head of the Budget Planning division (a female from South West Nigeria with four years' service at the study location) gave a personal experience of an optimal level of health: "my health has been good and stable, I have no issues with my health" (BP10). A finance officer (a male from the North Central zone with five years' service at the study location) acknowledged that the achievement of good and stable health occurred because of the interest, care and positive disposition towards HWS by the organisation; "I have enjoyed good health and I will give credit to 'B' because largely they made it happen. I hardly ever fall sick" (BP13). Some of the participants, including an officer from the Compensation division (a female from South West Nigeria with eight years' service at the study location) and the divisional head of Procurement (a male from the South West region with six years' service at the study location), simply described their health circumstances within the period of study as follows: "I have enjoyed fantastic health" (BP6) and "It has been pretty good" (BP8). This feedback signifies acceptable health and wellbeing levels for these participants. Furthermore, the head of the Engineering division (a male from South South Nigeria, with five and a half years' service at the study location) reported living with a chronic medical problem that is adequately controlled through organisation 'B's efforts:

> Things are under control with my health. I am on blood pressure drugs which have helped me and the reading has been within the normal range at least in the last six months. (BP4)

Similarly, an officer from the ICT division (a male from the South South region with six and a half years' service at the study location) highlighted his challenges to achieving good health and how he has been able to effectively address them:

> So far, my health has been okay. There is no problem with my health. I don't eat sugar and eat lots of 'efo' – I mean vegetables. (BP12)

Also, an officer from the Compensation division (a female from the South East region with eight years' service at the study location) was able to link the influence of WHPPs to sickness reduction in the family:

> The frequency of malaria attacks has drastically reduced. In my house we make use of the mosquito-treated nets in addition to other physical barriers to malaria attacks like the window nets. We spray the house on alternate days to reduce the rate of mosquito bites. This has assisted in reducing the frequency of infection… (BP6)

Also, the head of the Commercial division (a male from the North West region with five years' service at the study location) was able to specify his major challenge to the achievement of good health, including the narration of his recent ordeals; this employee further identified 'B's support in this regard:

> I have enjoyed reasonable health status…if not for 'B's arrangements for localised hospital support, one day in recent times, about a year and a half ago, I was rushed to the hospital due to stress and exhaustion. I was in the traffic going home for five hours after finishing at 5pm. I got home at 1.00a.m. It was such a bad day… (BP9)

Subcategory: Reported health issues

The respondents mainly reported health problems like malaria, cough, catarrh, raised blood pressure and stress. The head of the Engineering division (a male from South South Nigeria with five and a half years' experience at the study location) said "I am on blood pressure drugs"(BP4). Also, the secretary to the Human Resources division (a female from the North Central region with six years' service at the study location) identified the following usual health complaints: "…occasional fever or a cough…" (BP2). Also, an officer from the Engineering division (a male from the North East region with four years' service at the study location) expressed his regular health complaints as follows: "I have a cough and catarrh" (BP5). Also, the divisional head of Procurement (a male from South West Nigeria with six years' service at the study location) noted "I do have malaria

sometimes…" (BP8). Others identified health complaints but acknowledged the assistance of WHPPs in sustaining good health. The head of the Computer division, a female from South West Nigeria who had spent eight years at the study location, noted:

> I have a cough and catarrh due to lots of dust out there before coming into the building. Also, I do have malaria an average of once every month. It used to be more frequent but at least it is better than before. (BP7)

Similarly, the head of the Operations division (a male from South West Nigeria with four years' service at the study location) remarked that:

> My major sickness is malaria and once I go to the clinic they give me antimalarial drugs and I am back again, and this doesn't happen often…say once in a month. Other than that, I have enjoyed good health in the last three years. (BP3)

Category 6: Workplace health promotion programmes (WHPPs) and healthy lifestyles

Many of the employees reported the effective application of information from WHPPs in their dietary plan. For instance, the secretary to the Human Resources division (a female from the North Central region who had spent six years at the study location) affirmed that "They give us free food that is of high quality in terms of a balanced diet" (BP2). A Compensation division officer (a female from South East Nigeria with eight years' service at the study location) remarked that:

> The frequency for malaria attacks has drastically reduced. In my house we make use of the mosquito-treated nets in addition to other physical barriers to malaria attacks like the window nets. We spray the house on alternate days to reduce the rate of mosquito bites. This has assisted in reducing the frequency of infection. I exercise four times a week and at work here we enjoy a healthy, free and balanced [lunch] meal. (BP6)

These reports reflect the adoption of healthy lifestyle practices in daily activities by study participants (some of which were transferred into family life).

Category 7: Gender: health, equality and work

Subcategory: Understanding of gender equality

The participants described their idea of gender equality in various ways. Some of the comments described gender equality as the recognition of both sexes at work. The head of the Operations division (a male from South West Nigeria with four years' service at the study location) remarked on gender equality as follows:

> It is recognising the fact that both sexes exist and not putting one above the other. They are both important and meant to complement each other. (BP3)

The Human Resources division secretary (a female from the North Central region with six years' service at the study location) stated that "Whatever they do for male workers they have to do it for the female workers too" (BP2).This described gender equality as an act of doing the same thing for both sexes. This was corroborated by an ICT officer (a male from the South South region), who remarked that "basically, it is about sameness for both sexes. The two sexes, men and women, to be treated equally at work" (BP12). The head of the Engineering division (a male from the South South region with five and a half years' service at the study location) went a step further by noting the need to first identify the needs of both sexes and address them accordingly: "I think it is all about recognising the interests of both sexes and addressing them both" (BP4). In corroboration, the head of the Human Resources division (a male from South West Nigeria with six years' service at the study location) noted it as "a workplace that takes account of the needs of both sexes" (BP1). Also, it was described by the head of the Computer division (a female from South West Nigeria with eight years spent at the study location) as allowing both sexes the opportunity to grow – "It is about giving everyone, male and female staff, the same chances for opportunities to grow and develop at work" (BP7) – and taking care of the needs of both sexes, as expressed by the head of the Commercial division (a male from North West Nigeria with five years' service at the study location): "I think it is all about addressing the needs of both sexes" (BP9).

Subcategory: Comments on equality at work

Participants expressed varied opinions on equality at work. The head of Engineering (a male from South South Nigeria with five and a half years' service at the study location) explained it as "Equal opportunity for the workers" (BP4). Similarly, an officer from the Compensation division (a female from South East Nigeria with eight years' service at the study location) noted that "It is about equal chances and opportunity for the workers" (BP6), while the head of the Procurement division said "It is simply equity and justice" (BP8).

Although different words were used to describe equity at work, participants seemed to have similar opinions of this theme.

Subcategory: Gender: needs and work

Participants voiced the view that most of the WHPPs and other HWS matters addressed and met the needs of both sexes. For example, the secretary to the Human Resources division stated that the "majority of the programmes cut across the two sexes" (BP2). Also the head of the Operations division noted that "most of the health talks here affect both sexes, like malaria, Ebola, diabetes, but I think there were others too, with specific education for both sexes". Many of the participants stated categorically that they had their needs fulfilled. The head of Engineering stated that female needs were adequately addressed, plus those of the male staff: "Yes, of course. This is a male-dominated workplace because of the nature of the business, but the health and welfare arrangements still take care of the interests of the few ladies among us" (BP4).

Category 8: Participants, feedback and recommendations

Subcategory: Appreciation and management

Most of the participants acknowledged the positive contributions of their workplace to their entire life. Some of these assertions are highlighted below. The head of the Budget Planning division (a female from South West Nigeria with four years' service at the study location) stated that:

> The comment I have is to recognise and appreciate the 'B' management for their unrelenting efforts to make this workplace a 'second home'. (BP10)

The head of the Operations division (a male from South West Nigeria with four years' service at the study location) remarked "No comment really, other than for the management to keep the flag flying…" (BP3).

Subcategory: WHPPs and comments

All the participants gave positive feedback about the WHPPs and would like these sustained. For example, the head of the Engineering division (a male from South South Nigeria) noted that "…these are laudable programmes…" (BP4). Similarly, the head of the Procurement division (a male from the South West area with six years' experience at the study location) expressed his concern as follows: "Our hope is for the continuity of all these programmes" (BP8).

Subcategory: Constraints and external work environment

The only negative feedback from these participants was a constraint outside the work environment but within the work community. The head of the Commercial division (a male from the North West region with five years' service at the study location) lamented the road network to and from work. Although he had positive feedback and had had satisfying experiences within the workplace, the situation outside the workplace was daunting to this particular participant:

> Well, what can management do to the traffic situation on the way to and from work. They can only address situations within the organisation and not outside that and I think they are playing their role in this respect… (BP9)

In summary, all participants attested to a good experience of health, wellbeing and safety arrangements/impacts at work. These participants were full of appreciation for the management, with responsibilities and practices committed to constantly improving HWS among staff. Of importance was the provision of free lunches for employees at organisation 'B'. The only contrary account given by one of the participants did not directly concern the organisation; rather, it had

to do with the poorly maintained road network/access to the organisation's premises. This is a neglected responsibility of Lagos State/the federal government of Nigeria.

All the participants acknowledged that their needs were met at organisation 'A' (although not adequately).

On gender equality in health at work, virtually all the participants acknowledged their needs were met, although not adequately. However, a male participant expressed the need for more allocated days as paternity leave for the newborn fathers.

6.3.2 Part two: Service book

Category: employees, family and health

Organisation 'B' has supporting policies and robust arrangements to meet the curative health needs of staff and their families, as documented in the service book.

The company has selected health care providers that are as close as possible to the different localities where employees reside (in addition to the site clinic). The service book states that:

> Employees shall be required to register along with their immediate dependants, i.e., spouse and a maximum of four children, at a hospital recognised by the company in the locality or nearest to the locality where they live…

Subcategory: Gender and policy

'B' has a good level of support for female staff during pregnancy and breastfeeding. Moreover, it also has recognisable support for male staff.

Policy for pregnant staff

> Female employees…are entitled to four months' maternity leave with full pay. This shall be in addition to the employee's annual vacation leave for that year.

For nursing mothers, the following policy applies:

> Nursing mothers shall be allowed to be absent for this purpose for two hours a day for six months after resuming work …this may be extended for another six months….

Policy for male staff

The male employees have a day off to welcome their new babies.

> Male employees who have completed a minimum of 12 calendar months' service with the Company shall be entitled to one day's leave on the birth of their child.

Subcategory: Free healthy lunch policy for employees

As part of welfare and wellbeing support, the organisation offers a free, quality, balanced meal at lunchtime to its staff:

> The company provides free lunch to all employees in the Company's cafeteria…

In summary, organisation 'B' had a good level of health, wellbeing and safety arrangements, including provision of free lunches to staff.

Also, the organisation had gender-based policies to support health and wellbeing of employees.

6.3.3. Part three: HSE Policy

Subcategory: HSE policy and robustness

The HSE policy also indicated a high level of commitment to employees' HWS, as demonstrated in excerpts from the policy document on conformity to global and national policy, prompt hazard and risk assessment, and management, with continued monitoring of the work environment:

Compliance with best practice

> Comply with all health, safety and environmental legislation as a minimum…

Also, the organisation is very conscious of standards and will not accept any practice below this.

Monitoring and evaluation of programmes

Identify and evaluate all health, safety and environmental hazards and establish controls and techniques to manage risk to acceptable levels.

In summary, organisation ‘B’ implements and evaluates varied HSE programmes as outlined above and does not allow any conditions or behaviours that promote incidents and accidents. The HSE policy at organisation ‘B’ is dedicated to promoting employees’ health, wellbeing and safety.

Assessment of structural facilities in support of healthy lifestyle choices at work:

Presence of gym – available

Presence of canteen – available

6.4 Summary

In summary, malaria (one of the CD diseases) remains top of the list at organisation ‘B’. There was no record of significant levels of NCDs at this organisation but more CDs were recorded. The WHPPs were quite frequent but more are required in order to effectively deal with malaria and other recorded CD diseases at organisation ‘B’. No deaths were recorded within the period under review.

No pattern was observed in the sickness absence records during the years under review at this organisation. However, men experienced more sickness absence than women during this period.

In the interview transcripts, all participants attested to a good experience of HWS arrangements and impacts at work. These participants were full of appreciation for their management because of their commitment to constantly improving HWS among staff. Of particular importance was the provision of free lunches for employees at organisation ‘B’. The only contrary account given did not directly concern the organisation. Rather, this account had to do with the badly

maintained road network/access to the organisation's premises. This is a neglected responsibility of Lagos State/the federal government of Nigeria.

On gender, health and wellbeing at work, virtually all the participants acknowledged that their needs were met (although not adequately). In particular, the males expressed a need for more attention to their wellbeing (including a need for more days to be allocated as paternity leave).

Furthermore, organisation 'B' had a good level of health and wellbeing arrangements documented in the organisation's service book (including provision of free lunches to staff). Also, the organisation had gender-based policies to support the health and wellbeing of staff.

Also, the HSE policy at organisation 'B' is dedicated to promoting employees' health and wellbeing.

6.5 Conclusion

This chapter outlined, presented and compared the data from organisation 'B'. The clinic attendance records revealed the illness records, with malaria top of the list of CDs and NCDs. The organisation had insignificant records of NCDs. This may be due to the availability of structural facilities (a canteen serving free healthy meals and a gym for physical fitness) to support healthy lifestyle choices among the workforce. The findings from the study have assisted in providing insights into the efforts of this organisation to meet the health needs of both sexes.

Furthermore, the results reflected higher sickness absence among males compared with female staff. Moreover, relevant but inadequate policies on health and wellbeing (directed at combating diseases and ensuring gender equality in the process) were documented in the worksite's service book and corroborated by all participants at organisation 'B'.

Finally, these findings revealed a positive but inadequate impact (of organisation 'B') on the attainment of the MDGs. This contribution was achieved by both implementing preventive/treatment programmes for malaria and 'other diseases' and ensuring gender equality in health at work.

CHAPTER SEVEN

SYNTHESIS, COMPARISON AND DISCUSSION OF FINDINGS WITHIN AND ACROSS CASES

7.1 Introduction

This study aimed to determine the contributions of sustainable, healthy Nigerian workplaces to the attainment of the MDGs. In order to ascertain this, two research questions (section 1.4) were formulated. The next section of this chapter (section 7.2) discusses synthesis and comparison of findings within and across cases at organisations 'A' and 'B'. The last two sections (7.3 and 7.4) discuss and answer two research questions (section 1.4) using existing literature to situate the findings. Section 7.3 presents prevention and eradication efforts on malaria and 'other diseases' at case organisations. Section 7.4 focuses on gender equality and workplace health matters at organisations 'A' and 'B'. Answers to the research questions (provided in sections 7.3 and 7.4) reveal an inadequate contribution to the achievement of MDG 6 – combating malaria and 'other diseases' in Nigeria. This is despite the UN (2010) report of significant global improvement on this goal. Also, the findings show the need for more efforts to achieve gender equality in all affairs, including workplace health matters. These findings are discussed in sections 7.3 and 7.4. Additionally, the strengths and limitations of the study are presented in this chapter.

7.2 Synthesis and comparison of findings within and across cases

This section presents the comparison of findings at case organisations with a view to effectively answering the research questions (section 1.4) and achieving the aim (section 1.3) of this study. A detailed data analysis of organisations 'A' and 'B' was presented in chapters five and six respectively. This section further presents activities of case organisations in combating malaria and 'other diseases' (MDG 6 in table 1) at their workplaces.

Also, the section examines efforts made by these organisations to achieve gender equality (MDG 3 – table 1) in health at work. Consequently, this section determines the contributions of sustainable healthy Nigerian workplaces to the realisation of MDGs 3 and 6.

In terms of staff strength, organisation ‘A’ had more staff (2,692) than ‘B’ (1,004). Female staff constituted 25% of staff ‘A’, while they made up just 3.8% at ‘B’. Also, female staff occupied 19% of the managerial positions at ‘A’, while they occupied 25% at ‘B’. This shows that females are under-represented in paid employment (white-collar jobs) at both organisations, while organisation ‘B’ demonstrated better gender mainstreaming at managerial level.

Moreover, the top three predominantly recorded health complaints or risks at organisation ‘A’ were malaria (CD), obesity and hypercholesterolaemia (NCDs). At organisation ‘B’, the top three predominantly recorded health complaints or risks in declining order were malaria, upper respiratory tract infections (URTIs) and gastroenteritis (CDs featured only at ‘B’). So, malaria topped the list of CDs at case organisations during the period under review. Additionally, the recorded incidences of other health challenges or risks during the period under review lacked a pattern at both organisations. However, there was an exception at organisation ‘A’ with malaria, where there was a steady decrease in the incidence of this disease between 2012 and 2014 (but still topped the list for these years).

Enlightenment and sensitisation on malaria prevention and management occurred twice during the period under review at organisation ‘A’, (no sensitisation on the disease in 2013). Organisation ‘B’ sensitised its workforce a minimum of three times a year within the study period. This is a higher frequency than at organisation ‘A’. Overall, the average implementation frequencies of WHPPs for both CDs and NCDs at organisation ‘A’ were far lower than at organisation ‘B’. Furthermore, findings from interview transcripts at both organisations indicated that malaria was the main health challenge among studied participants. This corroborates findings from the numerical data (illness records). Moreover, the mortality records revealed seven deaths in 2012, nineteen in 2013 and none in 2014 at organisation ‘A’. However, no deaths were recorded at organisation ‘B’ during the period under review. Both organisations, however, have strong policies in their service books and HSE policies, reflected in chapter five and six that were for proactive and reactive health measures against diseases at work.

On interpreting or synthesising these findings with a view to answering the first research question (section 1.4), it can be seen that organisation 'A' is still challenged with a double burden of both CDs and NCDs while 'B' has only the single challenge of CD. However, both organisations contributed to the attainment of MDG 6 (combating malaria and 'other diseases'), with a better contribution from organisation 'B'.

In relation to answering the second research question (section 1.4), both organisations recorded higher sickness absence among males than females. There was a reduction in rate of sickness absence among females at organisation 'A' during the period under review, but no consistent pattern at 'B'. Both organisations implemented WHPPs on both men's and women's health and wellbeing (prostate, cervical and breast cancer prevention and identification). Also, participants from both organisations affirmed that the needs of both sexes were met by the implemented WHPPs, although, was inadequate.

At organisation 'A', a male secretary from the Audit division stated that

> I think they are trying. Sometimes, they do a programme for men and sometimes for women and sometimes for everybody. (AP10)

Another male secretary from the Business division remarked that:

> …the other day they gathered women to tell them about cervical cancer. Another time, they told us about prostate cancer… (AP2)

Excerpts of interview transcripts from organisation 'B' in support of WHPPs for both sexes are presented below.The head of Human Resources (male) remarked that:

> This is a male-dominated workplace because of the nature of the business, but the health and welfare arrangements still take care of the interests of the few ladies among us. (BP1)

In corroboration, the head of Budget division noted that:

> …this place is a rare place to work – the women enjoy a high level of support with pregnancy and delivery. (BP10)

Looking at records and policies: there are specific and relevant programmes that address the collective gender needs of employees at the case organisations. However, most of the policies are more female-friendly. Examples include maternity leave and earlier finishing times for nursing mothers. The following highlights this assertion:

<u>Female-supporting policy at organisation 'A'</u>

> All married female employees who are pregnant are entitled to a stretch of 12 weeks…

Also,

> Any female employee who is nursing a child shall be allowed to finish two hours before the official closing time every day…six months from the date of resumption from maternity leave…

<u>Male-supporting policy at 'A'</u>

> Nil recorded.

<u>Female-supporting policy at organisation 'B'</u>

> Females are entitled to four months' maternity leave with full pay…

Also,

> Nursing mothers shall be allowed to be absent for this purpose for two hours a day for six months … this may be extended for another six months…

Male-supporting policy at ‘B’

Additionally, “male employees…are entitled to one day’s leave on the birth of their child”.

HSE policies at case organisations

Analysis of HSE policies at the case organisations revealed that both organisations have strong, robust commitments and specific policies directed at ensuring the general health, wellbeing and safety of employees at work. Some of the key policies are highlighted in the excerpts below.

Organisation ‘A’s policy

> We will aggressively pursue effective management to ensure a good environment and the safety of our employees, contractors and concessionaires, minimise adverse environmental impacts and positively contribute to the communities in which we operate… Our main objective is to achieve zero harm to people and the environment…

Organisation ‘B’ s policy

> Identify and evaluate all health, safety and environmental hazards and establish controls and techniques to manage risk to acceptable levels. Risk assessments should be updated whenever a significant change in the working environment has occurred. Additionally, special emphasis will be given to controlling those hazards that represent the greatest potential for fatal injury.

Availability of structural facilities

In terms of the structural facilities available to support health and wellbeing at work - canteen and gym, organisation ‘A’ lacked the facilities but were available at organisation ‘B’.

7.3 Section one: Contributions of case organisations to the prevention and eradication of malaria and 'other diseases'

The top three predominantly recorded health challenges (or risks) at organisation 'A' (chapter five) were malaria, overweight/obesity and high cholesterol. Malaria topped the list of CD diseases (CDs) at organisation 'A' and hypercholesterolemia for NCDs/risks (NCDs) between 2012 and 2014. This finding from illness/clinic attendance records is consistent with the interview data. Most of the study participants reported that malaria was their major health complaint. Meanwhile, occupational health service records showed that organisation 'A' implemented 'irregular' WHPPs that kept malaria and 'other diseases' in focus during the period under review. Also, both the service book and the HSE policy at organisation 'A' demonstrated commitment to preventing and combating disease at work. The WHPPs included free distribution of mosquito nets.

Despite these efforts in curtailing the disease, malaria remains a major health challenge in Nigeria (Griffin et al. 2014; Dawaki et al. 2016). Dawaki et.al. (2016) noted that Nigeria has the highest number of malaria cases in the world, with almost 51 million cases and 207,000 deaths annually. Also, Akinbola and Omotosho (2013) affirmed that malaria infection occurs throughout the year in endemic regions. These authors acknowledged that rainfall and humidity positively support malaria transmission. Furthermore, although malaria topped the list of commonly reported CDs at organisation 'A', there was a steady decline (chapter five) in the reported incidence of the disease within the period under review. O'Meara et al. (2010) attributed the reduction in malaria burden in sub-Saharan Africa to the introduction and use of ITNs. In corroboration, 2010 witnessed 70% distribution of mosquito nets to households; this was a 65% increment over the previous documented figure in 2008 (WHO 2010c; Garley et al. 2013). However, some of the participants admitted not utilising the mosquito net (as a vector control barrier) due to hot and humid weather at night. The comments from participant AP4 (chapter five) exemplify this. O'Meara et al. and Dawaki et al. acknowledged a lack of consistency in the utilisation of ITNs for various reasons (including continual power outages in the study setting).

Essentially, the provision of ITNs does not guarantee their use among Nigerians sometimes, due to non-conducive weather.

Similarly, and corroborating organisation 'A's supporting policies (chapter five) for preventing and combating 'other diseases' at work, an appreciable number of participants shared positive experiences of how the implemented WHPPs endowed them with quality information on strategies to combat 'other diseases'. For example, some of the participants acknowledged that the WHPPs assisted in the establishment of a regular exercise schedule (e.g., AP15) and in losing excess weight through the adoption of healthy eating habits (e.g., AP19). However, there was no canteen or exercise/fitness facility at organisation 'A' during the time of data collection. Provision of staff canteen and fitness centre in the workplace could augment the implemented WHPPs (by providing choices for healthier lifestyles by employees). The lack of a canteen and fitness centre at work links to previous reports by the US Department of Health and Human Services (2003), which reported that 90% of worksites with WHPPs lacked structure and organisation for these programmes. In this report, only 6.9% were able to implement all the necessary segments of a comprehensive WHPP. These include provision of physical structures for health improvement (Linnan et al. 2008).

Meanwhile, two NCDs/health risks, hypercholesterolemia and obesity, were among the top three health challenges documented at organisation 'A'. Makrides et al. (2010) identified the need for concerted efforts directed at educating and implementing healthy eating and exercise fitness programmes in the workplace. This was reported to positively affect the prevalence and incidence of hypercholesterolemia and hypertension (affecting 38% and 16% respectively) in a Canadian study. In support, Buck et al. (2011), stressed the need to effectively prevent and combat disease, particularly common health problems (risks), at work, with a view to avoiding presenteeism (working with ailments) or reducing sickness absence among employees. These two situations (presenteeism and sickness absence) have negative impacts on employers and employees (in terms of productivity and wellbeing respectively). Similarly, Barnes (2010) noted that common health problems (e.g., obesity) have a highly negative impact on work. So, the need

for urgent action directed at the alarming prevalence of CVDs or risks was reiterated. Furthermore, the high prevalence of the modifiable health risks among these workers may not be extraordinary. Makrides et al. (2010) reported that only 15% of employees had no modifiable health risks in a study involving 6,067 participants, cutting across 51 various work settings (private and public). Makrides et.all (2010) documented that over half of the workforce had a minimum of two modifiable health risks. Hence, the study supports findings from this study that demonstrated a high prevalence of modifiable health risks among employees.

Specifically, 2012 had the highest recorded incidence (33.3%) of hypercholesterolemia and the lowest was in 2014 (28.6%). Hence, there was a decline of this CVD risk. This could be explained as a positive impact of the implemented WHPPs. Zungu et al. (2007) affirmed the positive effects of a systematic and well-planned WHPP. Also, obesity was ranked next to hypercholesterolemia, with the highest level recorded in 2014 (25.2%) and the lowest in 2013 (23%). The finding was similar to the CDC (2012) survey, which reported that 61.7% of the workforce was obese or overweight. This CDC report acknowledged that 76.3% of participants did not eat adequate fruit and vegetables daily (contributing to obesity prevalence). Earlier, Sturn (2007) noted an increasing incidence of overweight/obesity in the last decade. In corroboration, the WHO reported (WHOa and WHOb 2005) projected overweight and obesity to be among the major health risks for adult Nigerians by 2015. Hence, findings from organisation 'A' affirm the documented projection by the WHO. Also, most of the tasks performed at this establishment (organisation 'A') were sedentary, leading to a high level of inactivity and thus the need for increased exercise among employees. There is therefore a need for an organisational policy (for example, a policy of closing an hour earlier a minimum of three days a week) and relevant facilities (canteen and fitness centre) that will support positive health behaviours and address potential health risks among employees. This is crucial for the long-term sustainability of health and wellness among the workforce (Lowe 2004). In corroboration, the literature has identified the need for relevant policy in sub-Saharan Africa to assist individuals in making and maintaining healthy lifestyles, to enable this region to decisively control and manage CVDs and the associated risks.

So, the lack of relevant policies and structural facilities (canteen and fitness room) may be responsible for the high incidence and prevalence of hypercholesterolemia and excessive weight/obesity among the workforce studied. As a result, the WHPPs at this organisation were rendered either ineffective or non-functional.

Furthermore, the available mortality records following illnesses at organisation 'A' showed seven deaths in 2012, nineteen, the highest, in 2013, and none in 2014. This showed a significant improvement in the last year of study. However, Ebrahim et al. (2006) argued that there is no consistency in the success of WHPPs in reducing morbidity and mortality. Consequently, these authors acknowledged only insignificant effects of WHPPs on CVDs/risk factors and mortality in a Cochrane systematic review.

Addressing and discussing how organisation 'B' prevented and combated malaria and 'other diseases' among its workforce, 'B' had policies and structure to support healthy lifestyle choices at work. Participant employees from 'B' confirmed the availability of these resources. These include the provision of free lunches to all employees, weekly health talks directed at tackling common health challenges, and provision of an on-site clinic for emergencies and retainership hospitals for follow-up. Zaza et al. (2000) and the USPSTF (2007) have demonstrated the positive effects of employers creating and supporting an enabling environment to achieve positive health outcomes and reduce health risks among employees. These include the provision of a canteen, where various choices of healthy, balanced meals are made available, and access to a physical activity centre at work. These structures help to reduce NCD and/or CVD. Also, WHPPs need to be delivered at no cost with relevant policies to address contemporary needs, as practised at organisation 'B'.

However, the top three reported health challenges/risks at organisation 'B' were CD diseases (malaria, upper respiratory tract infections and gastroenteritis. This finding was contrary to previous reports (Gaziano 2008; WHO 2009b; Deaton et al. 2011; Fuster 2014) which noted disease burden to have shifted from the conventional infectious to non-infectious diseases. The presentation outlined in chapter six showed malaria to be top of the list for both CDs and NCDs at 'B'. 2014 accounted for the highest recorded level (75.6%), followed by 51.4% in 2012 and 30.7% in

2013. These findings (malaria topping the list of reported illnesses) corroborate the earlier presentation of this disease (malaria) in the preceding paragraphs of this chapter (please refer to these paragraphs for detailed discussion). In particular, Dawaki et al. (2016) have noted that malaria is still the highest health risk/most prevalent disease in Nigeria. Although this workplace organises various WHPPs directed at malaria and 'other diseases', there is a need for more stringent action against CD diseases (URTIs and GIT infections; details in chapter six) at this organisation, with particular emphasis on malaria disease. This is because only CDs formed the top three documented health challenges at 'B'. Hypertension is the only recorded modifiable health risk with the highest incidence (15.1%) and lowest incidence (5.0%) in 2013 and 2014 respectively. There were no recorded cases of diabetes during the study period. This implied a potentially significant reduction in the recorded incidence and prevalence of 'other diseases' at organisation 'B'. The specific reduction in CVDs or health risks ('other diseases') is attributable to consistent approaches utilised for the WHPPs at organisation 'B'. Deaton et al. (2011) concluded that both individual and population-(group-) based approaches are useful in promoting heart health and preventing or controlling CVDs. Despite the positive feedback and documented records of WHPPs at organisation 'B', the USPSTF (2007) expressed inadequate proof to support the recommended health practices (including an increase in fruit and vegetable consumption, improvement in physical exercise and weight reduction among employees) in combating disease. However, the lack or limited number of modifiable health risks among employees at organisation 'B' further corroborates many reports that support the positive effects of WHPPs (with an emphasis on those directed at NCDs/risks). Furthermore, the need for a gradual and strategic approach when trying to reduce or eliminate health risks among individuals was identified; any effort to address them all at once may be quite challenging, overwhelming and difficult for the employees concerned. However, findings from this organisation did not conform to this assertion. Multiple health talks or WHPPs were implemented at 'B' (highlighted in chapter six), with significant reduction/eradication of NCD/CVD health risk at this workplace (for instance, there were no recorded cases of diabetes or mortality between 2012 and 2014).

Comparing findings of organisations ‘A’ and ‘B’ in relation to the first research question (section 1.4): organisation ‘A’ reported more NCDs than ‘B’. This is in line with assertions made by previous researchers (Gaziano 2008; WHO 2009b; Deaton et al. 2011; Fuster 2014). Conversely, organisation ‘B’ recorded more CD diseases as predominant health challenges. However, malaria topped the list of CDs at both organisations. This is in line with the report by Dawaki et al. (2016) on this disease in Nigeria (it leads morbidity records in the country).

Furthermore, both organisations have the policies necessary to prevent or combat malaria and ‘other diseases’, but organisation ‘A’ lacks some of the relevant structural facilities (canteen and fitness centre). Also, both organisations have robust reactive health arrangements for their employees, with organisation ‘A’ having a policy of medical evacuation of staff when this necessary. Additionally, unlike organisation ‘A’, which recorded deaths in the years 2012 and 2013, there were no deaths recorded at organisation ‘B’ throughout the study period. This may be due to the existence of both policy and structural facilities to both proactively and reactively support the health and wellbeing of employees at this organisation.

Generally, while organisation ‘A’ made an impact on the attainment of MDG 6 (combat malaria and ‘other diseases’), organisation ‘B’ seems to have performed better.

7.4. Section two: Contributions of Sustainable HWs to gender equality in health at work

This section addresses the second research question (section 1.4) of this study, directed at examining the achievements made by case organisations in gender equality and health matters at work.

The findings from the case organisations revealed that there were more males than females at both workplaces (men constituted 75% of the workforce at ‘A’ and 96.2% of ‘B’). Similarly, males occupied more senior positions than female employees (80.9% at ‘A’ and 75% at ‘B’). This data shows the under-representation of women in the workplace at all levels, leading to women having a limited voice and impact when decisions are made (as the majority (men) have the final say). Hence, this finding

supports the report by Kangiwa (2015), which noted more systematic discriminatory practices towards women than men at workplaces in Nigeria. Similarly, it corroborates the UK Department for International Development (2012) report that noted that Nigeria exhibits high and worrying levels of both inequality and inequity between men and women. Also, it corroborates Brouwers' (2014) assertion of an increase in denial of fundamental human rights for women in sub-Saharan Africa and South Asia, leading to a failure to achieve gender equity in workplaces. Doyle et al. (2005) demonstrated the negative impacts of gender imbalance at work that result in a number of health effects. This can prevent the under-represented gender group from accessing the resources required to support good health. Consequently, it may lead to negative and overwhelming health effects on the affected gender group. However, findings from the case organisations revealed higher sickness absence in males (69%, 73% and 81% for 2012, 2013 and 2014 respectively) than females and a steady increase within this group during the period under review at organisation 'A'. In contrast, the record revealed a decline in sickness absence among females at organisation 'A' within this period. At organisation 'B', no consistent pattern was observed in the sickness absence for either sex but records were higher among males (89%, 95% and 93% during the period under review) than females. With higher reported sickness absence among males than females, a situation called presenteeism (working with ill-health) might have existed among women. This might happen because they constitute a gender minority.

Also, these findings can be said to support those of the WHO (2011a), which reported significant disparities in health status among Nigerians, with no sustained political arrangement to achieve gender equity in many societies of this nation. However, the records of sickness absence for both sexes from both organisations were contrary to the evidence documented by Casini et al. (2013), who reported higher sickness absence among females than males. This unique deviation from the norm with women recording lower sickness absence and men were having higher records of sickness absence may be explained as evidence of less or inadequate contributions by the two workplaces studied to the attainment of gender equality particularly on health matters in Nigeria. This is why Mastekaasa (2003) admitted that considerable gender differences occur in sickness absence, and women are not necessarily more susceptible than men to sickness absence. This is in line with the outcome of the study.

In support, Elwer et al. (2013) noted that gender inequality in the workplace can affect either of the sexes. Hence, discrimination can occur against men or women at work. Specifically, Courtenay (2000) noted that male workers' experiences (particularly in relation to their gender and social roles) have not often been well explored .Furthermore, Islam et al. (2001) showed that differences do exist between males and females in the duration of sickness absences, and various reasons were proposed as the potential causes for this. For example, Islam et al. showed that women have longer sickness absences on average than do male employees. Possible reasons as given by these authors include the greater involvement of women than men in domestic responsibilities (thus weakening their immune system). However, Messing et al. (2006) have argued that males going back to work more quickly than females might stemmed from the pressure to go back as the breadwinner in an appreciable number of countries. Additionally, Casini et al. (2013) acknowledged that longer sickness absence in females resulted from the gender pay gap, which predisposes this category of employees to more health crises than the men.

Also, both case organisations implemented gender-based WHPPs to the benefit of employees. This was reported by most of the study participants, highlighted in chapters five and six (e.g., AP2 and BP10). Furthermore, both organisations demonstrated more female-friendly (although inadequate) policies. This is line with article 183 of the International Labour Organisation, which requires all member states to provide pregnant females (there is no provision for paternity leave in the article) with a minimum of 14 weeks' maternity leave (this could be extended at the discretion of each nation). Most member states adhere to this rule and offer this opportunity with full pay to the female employees concerned, except in the USA where there is no pay associated with this provision (Popovich 2014; US Department of Labour 2016). Other countries, including the UK, extend this provision beyond 14 weeks with pay. The Nigerian government is, equally, making efforts to extend this provision beyond the ILO's recommendation (Federal Ministry of Health 2016). Until this is achieved, the current provision remains 14 weeks, stipulated in Chapter 198, Part III of the Laws of the Federation of Nigeria (1990). In particular, organisation 'A' supports 12 weeks' maternity leave (two weeks less than the recommendation of article 183 of the ILO on maternity leave and the federal government recommendation) for pregnant employees,

with allowance of finishing work two hours earlier than the regular staff for six months during breastfeeding. Interviewees also confirmed the implementation of maternity leave and earlier finishing times for pregnant females. However, there was no provision for paternity leave (applicable to fathers of newborns) in organisation 'A's policy, confirmed by interview participants (e.g., AP6). The ILO (2012) noted that work–family reconciliation measures are not only for females but also for males. Provision of paternity leave allows shared roles, particularly when women are more engaged with work. Sorensen et al. (2016) noted that workplace interventions that focused on workers and families are indispensable in strengthening family life. Consequently, Allen (2001) observed that workplace arrangements with effective support for work-family life have a positive influence on employees' health and wellbeing.

Organisation 'B', a private organisation had a little improvement over 'A', a government organisation, regarding provision of maternity and paternity leave. It endorsed 4 months maternity leave for pregnant employees and one-day paternity leave for fathers. However, the Lagos State provision on these policies of six months maternity and two weeks of paternity leave are better than those provided at 'A' and 'B'. Similar to Lagos state, Enugu state approved six months with pay for pregnant employees for the first two babies with two weeks' paternity leave (Omorotionmwan 2015). Comparing findings from both workplaces, it can be seen that there were conscious efforts to have gender-sensitive workplace health policies and practices at both organisations.

In summary, the findings from the case organisations revealed that men experienced discrimination and inequality on workplace health matters (especially at organisation 'A'), compared with women. Meanwhile, Braveman and Gruskin (2003) admitted that equalising opportunities for health at work (meeting gender needs in the workplace) leads to addressing the most important social and economic determinants of health and development. The attainment of an optimal health level, including social, physical and mental wellbeing, is a fundamental human right for all (irrespective of gender or any protected characteristics an individual may possess) recognised through many regional, national and international declarations and charters (Equality Act 2010; Brouwers 2014). Hence,

Sorlin et al. (2011), in a Swedish study, concluded that organisations with smaller gender gaps have similar sickness absence rates for both sexes. Also, the WHO (2010d) reported that WHPPs that take account of sex or gender reported experience of better health and wellbeing among employees.

However, Eslava-Schmalbach et al. (2008) admitted that challenges exist in determining health inequity among humans. Hence, this disputes the objectivity or accuracy of measures in determining health inequity among diverse groups within society, including men and women. For the purpose of this study, the researcher used sickness absence record and employees' accounts of health experience at work to determine equity in health between the gender groups at the organisations studied. This was due to limited data on gender at studied SHWs. Thus, the situation at the SHWs corroborates the previous research (Haile 2012) documented, there have being a dearth of knowledge on gender specific health records or research.

7.5 Strengths of the study

This study has added to the existing information on the effectiveness of WHPPs through analysis of the data gathered on these programmes at the organisations studied.The literature stressed the importance of and need to evaluate WHPPs. For instance, Cancelliere et al. (2011) reiterated the need for ongoing research in determining characteristics of successful WHPPs, using various research methodologies, including comparative case studies. However, none of the studied organisations have had the opportunity to do so prior to this study. Hence, this study served as an opportunity to evaluate the WHPPs implemented at the case organisations. Specifically, the study assisted in identifying the areas of the implemented WHPPs needing improvement by these case organisations. Furthermore, the adopted literature review strategy (section 2.1) of this study helped to identify strong, evidence-based practice and potential aftermath policies relevant for workplace health and wellbeing.

Also, the multiple methods of data collection deployed in this study (documentary analysis and interview) allowed data comparison, thus giving prospect to effectively

address the research questions (section 1.4). Consequently, this offers an opportunity of transferability of study implications in similar settings.

Similarly, pragmatism as the underpinning philosophy for this study allowed unrestricted access in resolving the research questions in this study, thereby limiting bias possibility and allowing potential transfer of knowledge outcomes from this study.

Moreover, the careful, purposeful, strategic selection of cases and samples in this study makes it more robust for transferability of findings in similar settings. The sampling and selection of the two organisations utilised in this study were based on best HSE performance in the study environment. One must be a government organisation with best performance in HSE at work while the other is a private organisation with the same criteria. Setting this standard helped to remove or at least reduce bias in the choice of organisations that participated in this study. Other conscious efforts made to ensure fairness of choice of the workplaces studied included the setting out of selection criteria for both case organisations and participant employees (inclusion and exclusion criteria were preset and outlined in sections 4.14 and 4.15).

Also, in order to ensure maximum case variation, the researcher checked that both genders and the six Nigerian geopolitical zones were represented among the participants.

Furthermore, the study examined the relevant MDGs 3 and 6 in consideration of the research setting and population. Hence, this study ensured that ‘other diseases’ were defined as the top three reported health risks or challenges at the case organisations. This was done with a view to examining the availability, adequacy and effectiveness of preventive and control strategies directed at these health risks or diseases.

Additionally, the researcher’s experience (as an occupational health provider with a decade of experience) and that of the supervisors (in both academic and nursing practice) assisted with the development of predetermined themes and consequent adoption of the adapted tool (see appendix 4) for the semi-structured interview

guide utilised in this study. The researcher's experience also provided guidance in identifying and collecting relevant data amid multiple and varied data sources in the field.

The member-checking (the transcribed interview was taken back to the study participants to affirm that the information provided during the interview was correct and appropriately documented) performed by the researcher to ensure the trustworthiness of this study assisted with the enhancement of research quality. All the participants except one at organisation 'A' made an adjustment, which was effected before the commencement of data analysis. No participants at organisation 'B' adjusted the transcribed interview.

7.6 Limitations of the study

Due to time and financial constraints, it was not possible for the researcher to appraise the contributions of all stakeholders in Nigeria (neither all workplaces nor all healthy organisations could be assessed) to the attainment of the MDGs. Consequently, only two case organisations were assessed (organisations 'A' and 'B'). Moreover, the study examined only the effectiveness of the preventive efforts of organisations 'A' and 'B' directed at the top three reported health problems. So, the effectiveness of preventive programmes for other health problems was not kept in focus.

Transferability of the findings from this study is limited to similar HWs; they cannot be applied to all workplaces. Also, the use of convenience sampling deployed at organisation 'B' following sample inadequacy restricts the transferability of findings from this study to similar settings.

7.7 Summary

This chapter discussed and compared study findings in relation to the two research questions (section 1.4). Participant organisations' contributions to the attainment of relevant MDGs (3 and 6) were compared and discussed using the existing literature to corroborate or refute findings. Both numerical and textual data were used to answer the two research questions that determined the organisations' performance in relation to MDGs 3 and 6.

7.8 Conclusion

Findings from the study were discussed with reference to the research aim (section 1.3) and questions (section 1.4). Relevant literature was used to situate the findings. Also, both strengths and limitations of the study were presented.

PART FIVE: CONCLUDING SEGMENTS

CHAPTER EIGHT

SUMMARY OF FINDINGS, IMPLICATIONS AND EXPECTED CONTRIBUTION OF THE STUDY TO KNOWLEDGE

8.1 Introduction

This chapter presents the summary of findings from both organisation 'A' and organisation 'B'. The first summary outline was derived from organisation 'A', followed by 'B'. Additionally, the chapter highlights the study implications. Ordinarily, findings from this study were non-generalisable because of the research approach deployed (qualitative case study). However, with the level of research quality used (including comparison of numerical with textual data), there is potential for transferability of findings to similar settings either locally or globally. Hence, this chapter outlines and puts together the suggestions from (among others) study participants, the findings from the documents analysed and the results from the literature review. Moreover, the implications of the findings from this study are discussed with due consideration for local (Nigeria developmental programme) and global (e.g., Sustainable Development Goals) contexts. Four different perspectives were utilised to advance this segment of the thesis (which includes policy, practice, education and research) as they relate to the research questions (section 1.4). Consequently, the implications of the study are presented using the following subheadings: (a) implications of findings for future workplace health promotion programmes, (b) implications of findings for prevention and management of malaria disease, (c) implications of findings for prevention and management of CVD or health risks, and (d) implications of findings on gender equality in health at work. Also, the expected contribution of the study is highlighted in the subsequent paragraphs.

8.2 Summary of findings at organisation 'A'

The following summarises the findings at organisation 'A' using the research questions (section 1.4) as a guide.

Malaria topped the list of recorded CDs at organisation 'A' (with declining incidence between 2012 and 2014), while high cholesterol level topped the list of NCDs or risks. Over half of the participants had hypercholesterolemia and were either overweight or obese. There exist some relevant but inadequate workplace policies

and practices to promote the health and wellbeing of employees at this organisation. Moreover, there was a significant lack of structural facilities (canteen and fitness centre) to support and augment proactive health and wellbeing programmes at organisation 'A'. Consequently, the adoption of healthier lifestyle choices at work was not fully supported.

On WHPPs, the majority of participant employees found the WHPPs (including sensitisation on malaria and modifiable health risks for NCDs) to be useful. However, a very limited number utilised the insecticide-treated nets (ITNs) provided to protect against mosquito bites due to uncomfortable temperatures. Generally, the WHPPs were irregular, sometimes ineffective, and devoid of needs-based assessment before planning and implementation. Also, none of the implemented WHPPs had been subjected to evaluation at the time of study. Most of the participants found the annual health checks to be most useful, but the frequency was noted to be inadequate. Nearly all considered it the top priority and would like it repeated an average of three times a year.

There was no record of mortality due to illness in the last year of study. Also, renovations of the organisation 'A' building (at a certain time) negatively affected the health, safety and wellbeing of an appreciable number of employees.

The summary of findings from the second research question (section 1.4) showed more males than females at organisation 'A'; the same is the case at the management level (fewer females at the decision-making level). However, sickness absence increased among male participants throughout the study period.

There were gender-specific workplace policies and practices but these were largely supportive of females compared to males. Paternity leave was not yet accepted at this organisation, just like in most societies of the world.

8.3 Summary of findings at organisation 'B'

Reference is made to section 1.4 while summarising the findings from organisation 'B'. This section provides a summary of answers to these questions.

The top three predominant recorded health challenges were infectious diseases (CDs). These were malaria, gastroenteritis and upper respiratory tract infections. Specifically, malaria topped the list of predominant health challenges at this organisation. There were insignificant cases of CVDs or health risks with no recorded cases of diabetes or deaths between 2012 and 2014. Organisation 'B' had relevant workplace policies and practices to promote the health and wellbeing of employees. Additionally, there were structural facilities - canteen and fitness centre to support and augment proactive health and wellbeing programmes. The majority of participants found the weekly WHPPs (including sensitisation on malaria and modifiable health risks for NCDs) useful. The WHPPs were more regular and sustainable, and most of the participants found the annual health checks to be most valuable.

Furthermore, the summary of findings for the second research question (section 1.4) showed more males than females in this organisation and at the management level. No pattern was observed in the sickness absence record between or among the two sexes. There were gender-specific workplace policies and practices but these were largely more supportive of females than males. The males are allowed one day as paternity leave, as documented in the organisation's service book. However, participants gave positive accounts of gender health issues in their workplace.

8.4 Implications of findings

8.4.1 Implications of findings on workplace health promotion programmes

Eradication of diseases (either CD or non-CD) can be achieved through well-organised workplace health promotion programmes (WHPPs). In order for the WHPPs to be relevant and effective, workplaces need to establish their contextual needs before design and implementation. Moreover, when carrying out these activities, efforts need to be made to evaluate or assess their impact. Goetzel et al. (2007) reiterated the significance of a well-designed WHPP that includes evaluation and follow-up of the activity. All workplaces need to adopt and carry out WHPPs following the four steps recognised by Chu et al. (2000). The first is a needs assessment to identify the focus and the frequency of the WHPP at the organisation. Any activity carried out without this consideration may be an exercise in futility,

wasting time and material resources. Findings from the two organisations revealed a lack of needs assessment for the implemented WHPPs. As a result, the WHPPs were less efficient. Furthermore, the frequencies were inadequate and less focused on the predominant health challenges at the case organisations. Goal 3 of the SDGs encourages promotion of good health and wellbeing by all stakeholders, including governments and non-government organisations. In order to achieve this, there is a need for assessment to determine the areas and delivery frequency of the WHPPs. The second is planning of the WHPP, which follows once the need is determined. Third is the implementation of the WHPP. Last is the evaluation of WHPPs. Similar to a lack of identification of areas of need for the WHPPs, the workplaces studied did not evaluate all the implemented WHPPs. Lack of evaluation makes it impossible for the organisations to determine the effectiveness and required frequencies of these programmes. In order to successfully contribute to and achieve SDG 3 (promote good health and wellbeing among employees), organisations will be required to evaluate the implemented WHPPs.

8.4.2 Implications of findings on prevention, management and eradication of malaria disease

It has been well established that malaria can be prevented and effectively managed (Sachs 2002; Makinde and Okosun 2011). Moreover, any adopted strategies on malaria disease prevention and eradication need to include implementation at the personal and environmental levels. First, there is a need for a stringent policy to ensure an effective malaria vector control locally at the organisations studied and in Nigeria as a nation. Workplaces need to set targets and specific policies to curb the high incidence of the disease. This becomes necessary because malaria tops the list of the predominant health problems among employees and is the major cause of sickness absence at work. One example of relevant policy to protect employees is provision of mosquito-repellent creams for all night workers on a regular basis (e.g., monthly or as may be required). Similarly, the workplace could have a policy to supply mosquito sprays and insecticide-treated nets to employees at regular times. This would be in addition to the provision of window nets in all offices. Additionally, workplaces need to establish and implement periodic tests for prompt malaria detection and treatment with a view to reducing sickness absence among

employees. There is a need for sustainable provision of antimalarial drugs and prophylactics at workplace clinics or at the retainer hospitals. This will ensure effective and efficient management of malaria disease among employees. Also, it will reduce or halt the potential spread among the workforce.

An example of workplace environmental policy is to document the adoption of environmental sanitation programmes in the service book. This could be arranged to happen twice a month (or more frequently as may be deemed necessary, and subject to review) with full staff participation by all stakeholders from management to the lowest rank. Implementation of this policy will require cleaning, tidying and decongestion of offices at regular intervals. This is to prevent hiding places for mosquitoes. Moreover, allocation of relevant resources for programme delivery must be adequately taken care of in the budgetary provision. Additionally, there is a need to launch more and regular sensitisation programmes directed at preventing and combating malaria disease at work. Such programmes would emphasise strategies to prevent malaria infection in or outside the work environment. Employees need to be educated on the process of infection by mosquitoes and on the available prevention options. Such education or awareness programmes need to include information on environmental hygiene (e.g., devoid of stagnant water). Also, there is a need to plan and implement more sensitisation programmes on the possession and effective use of mosquito-treated nets.

Furthermore, Nigeria needs (as a matter of urgency) to set a policy targeted at eradication of malaria in the country. This is because studies have shown that the nation harbours the highest incidence of malaria globally. Consequently, the negative economic effects on the working class cannot be overemphasised. Already, most Nigerian states have a policy of monthly environmental sanitation programmes. The recorded high incidence of malaria disease in the country shows that the current effort (environmental sanitation) is inadequate or ineffective or, rather, both. Also, the reason for the failure of the efforts could be due to a lack of synchronisation of these efforts at state levels. There is a need for the federal government to set and enforce policy on environmental sanitation to curb the activities of vector-carrying malaria parasites. As part of efforts to eradicate malaria, Nigeria needs to plan large-

scale alternative power sources (e.g., solar energy), as malaria-carrying mosquitoes function best in darkness. In order to promptly achieve this, the Nigerian government could encourage and support private companies to invest in improving the current exploration and utilisation of alternative energy sources in Nigeria. Currently, Nigeria experiences an inadequate and non-sustainable electricity supply. The lack of electricity at night promotes massive frequency of mosquito bites and malaria infections among Nigerians. Additionally, the non-availability of electricity at night discourages the use of mosquito-treated nets by individuals that possess them because there is no access to fan or air conditioner. So, Damien et al. (2011) noted that individuals are unlikely to use the treated nets during hot seasons (due to heat discomfort).

Also, research funding is required for the Nigerian government to undertake studies of nations that were once affected and are now clear of mosquitoes. Such studies will assist the Nigerian nation to better strategise and effectively deal with and eradicate malaria disease. Where free distribution of insecticide-treated nets is impossible, the United Nations needs to assist the Nigerian government to ensure their procurement and sale to Nigerians at a more affordable price. This will encourage all household members to sleep under one, thus curbing mosquito bites and infection by the plasmodium species. Griffin et al. (2014) identified that malaria reduction had occurred in certain sub-Saharan African countries. Examples of such countries include Rwanda and Ethiopia. The efficacy of the nets against bites from anopheles mosquitoes has been reported by studies including O'Meara et al. (2010). This was corroborated by the WHO (2010c), which reported significant improvement in the malaria disease burden in sub-Saharan Africa after utilisation of treated nets (among others) and following funding by international bodies. Similarly, there is a need for more research endeavours on formulation of new and effective antimalarial therapy. This becomes important with the tendency for resistance to malaria drugs (drug-resistant malaria). Hence, local and international government bodies need to encourage researchers by funding more studies directed at producing more innovative and active antimalarial drugs. This is necessary in order to achieve goal 3 (promote good health and wellbeing) of the current development agenda – the Sustainable Development Goals.

8.4.3 Implications of findings on prevention and management of CVDs or health risks

Regular and more frequent sensitisation programmes directed at prevention and management of chronic health risks/diseases are vital in order to curb CVDs or risks (NCDs). Such sensitisation needs to include regular and frequent screening and be targeted at prompt identification and referral (as may be required) of cases of CVDs or risks among the workforce. Doing this, will improve the global population's health and achievement of the development agenda, including the realisation of SDG 3 (promote good health and wellbeing) of the sustainable development objective. Furthermore, health education needs to target the importance of and the need for adoption of healthy lifestyles by employees. Also, workplaces need to provide and sustain the necessary structural facilities supporting adoption of healthy lifestyles among employees. These will include provision of a canteen within the workplace where healthy meals are prepared and served at affordable prices. Similarly, workplaces need to provide and maintain structural facilities for exercise/fitness activity. Moreover, employees need to be encouraged to restrict their work activities to working hours, to promote adequate rest and sleep among staff. Organisations should also consider providing accommodation for staff, close to workplaces in busy cities (e.g., Lagos). This may require relocating offices to an environment that will permit the coexistence of both offices and accommodation for employees. Such provision is capable of reducing stress by eliminating long commutes, thus allowing more resting/sleeping time for employees. Such flexible arrangements have the potential to reduce sickness absence and hospital visits among employees. Eventually, there will be reduced health care costs to the employers. Additionally, there is a need for adequate provision of drugs to manage CVDs or risks in workplace clinics, comprising antihypertensive, antidiabetic, anticholesterolemia. Also workplaces, especially in sub-Saharan Africa need to map out strategies to deal with infectious diseases. Such efforts need to include WHPPs directed at addressing gastroenteritis and upper respiratory tract infections.

Crucially, sensitisation needs to emphasise the importance of personal and environmental hygiene.

8.4.4 Implications of findings on gender equality in health at work

The Nigerian government needs to consciously adopt gender mainstreaming as a path to development. There is a need to consciously include gender as a federal character component and enforce equal rights for men and women as dictated by international standards including Nigeria's constitution (Kangiwa 2015). Nigeria's cultural orientation presents a double workload for working-class women (highlighted in section 1.1). Also, findings from the literature showed that women face a high level of gender discrimination in Nigeria, which has affected their wellbeing. Consequently, there is a need for sensitisation on equal sharing of responsibility among spouses/partners to reduce women's workload and health risks and to enhance their wellbeing. Extensive cultural reorientation, sensitisation and education are necessary. Health interventions at work need to be conscious of equal opportunity for both sexes. Workplace health promotion programmes need to decisively ensure equal access to relevant health and wellbeing programmes for both men and women. Hence, there is a need for gender mainstreaming in workplace health matters in order to achieve optimal health and wellbeing for the gender categories at work. In particular, Dkhil (2014) recognised the important contribution of addressing the inequalities between genders in poor and developing nations in order to resolve the malaria pandemic. This is because malaria is more problematic to the female group (Sachs and Malany 2002) than to males. Also, Zhang et al. (2011) documented disparities in clinical outcomes regarding CVDs between males and females. Joynt et al. (2015) acknowledged poor prognoses in the female group and their cause is yet to be clearly ascertained. Hence, there is a need for allocation of more resources to the female group than to males in order to achieve health equity at work, locally or globally. Consequently, global development programmes, including the Sustainable Development Goals, need to ensure the allocation of more resources to females (compared with males) in all sectors for the achievement of gender health equity. However, some circumstances (as implied in this study) may require provision of more attention and resources for males than females. This explains the importance of need base assessment prior to programme planning and implementation.

Also, findings from the case organisations revealed health inequalities where men are in the disadvantaged position (although women might have been experiencing presenteeism). Smith and Tessaro (2009) reported discrimination in terms of WHPPs. Similarly, Elwer et al. (2013) reported accounts of different experiences between gender groups on workplace health matters. Hence, studies have demonstrated the significance of ensuring health equity between men and women. For example, Archibong et al. (2006) demanded suitable intervention plus far-reaching sensitisation programmes on gender inequity (Archibong and Sharps 2011) in various settings (plus workplace settings). This is to ensure equity of opportunity and outcome for both sexes in all affairs (together with health) and settings.

Additionally, there is a need for gender-specific policies to address the issue of paternity leave among male employees globally. This will enable performance of paternal caring roles for their newborns. Doing this will lead to the promotion of equality between the gender groups with maternity leave for pregnant employees and paternity leave for fathers of newborns. One of the two organisations studied gave one day's leave to new fathers, but no such provision existed in the second organisation. Also, two of the 36 states in Nigeria permit two weeks' paternity leave. Article 183 does not make provision for paternity leave at all; however, some developed nations (including the UK) allow two weeks' leave for fathers of newborns.

8.4.5 Safety considerations

Future construction plans and renovation and maintenance of workplaces need to adequately consider the health, wellbeing and safety of employees (and service users) at organisations. Such activities are better carried out at night or weekends when there are no staff (or a very limited number of staff) on duty. This is with a view to reducing the risk of exposure of employees and service users to hazards. Moreover, when such renovation activities become inevitable, the necessary provision needs to be made by relocating affected employees (whose offices are directly affected) to suitable offices (there is a need for due consideration of the health, wellbeing and safety of the affected staff).

8.4.6 Need for improved health records

Organisations and nations need to keep robust health records. Accurate records of health, comprising the necessary demographic data (e.g., gender and health) are less or not readily available in developing countries, including Nigeria. As a result, health records in the country are poor or lacking. Reasons include the lack of case presentations at regular health institutions (Littrell et al. 2011). In support, Cox et al. (2007) highlighted the need for robust epidemiological data to include records of morbidity and mortality from malaria disease (by gender). Additionally, Hamalainen et al. (2009) acknowledged the poor and ineffective record-keeping, particularly in developing nations, with data missing on employees' health and performance. For instance, only the sickness absence records at the case organisations were gender-specific; the gender differences for other health records were not documented. Consequently, it becomes imperative for future health records to be gender-specific in all respects.

8.4.7 Formulation, domestication, adoption and enforcement of health, wellbeing and safety policy or legislation

There is a need to formulate and adopt (where absent) more relevant legislation on HWS locally and globally. Furthermore, there is a need for appropriate enforcement of these policies/legislations to ensure their effectiveness and the achievement of good health status and wellbeing among employees, and the general populace. Carrying out the enforcement will positively contribute to the achievement of goal 3 of the current sustainable development agenda (SDG 3).

8.4.8 Other implications

There is a need for continuity or sustainability of (and possible improvement over) the existing programmes and arrangements regarding the workplace health, wellbeing and safety of staff. Virtually all the employees interviewed expressed concern and their wish for the continuation of the existing health and wellbeing programmes at their workplaces.

8.4.9 Implications for future research

Studies need to explore other reasons for non-use of treated nets outside the constraints posed by power outages due to the inadequate and inefficient electricity supply in Nigeria. This will offer holistic and robust solutions leading to effective and efficient malaria control and eradication in Nigeria. Furthermore, there is a need for further study to determine what contributed to the lack of mortality following illness at organisation 'B', for the purpose of sharing best practice. There is a need to study other nations that were once affected by and have now combated or eradicated mosquitoes (e.g., the UAE and Morocco). This is for the purpose of sharing knowledge and best practice on malaria control for potential adoption of these strategies by the Nigerian government (or any other affected countries among the UN member states).

Also, future work needs to assess the effects of a healthy workplace on organisations' productivity and performance in Nigeria. This will add to the existing knowledge of the impact of such workplaces on socio-economic development locally or globally.

Finally, there is a need for more research to determine the cause of high rates of sickness absence among males at both organisations. Additionally, there is a need for more studies to illuminate the effects of malaria on non-pregnant female employees. This will address the dearth of knowledge on gender, health and wellbeing at work. Currently, the available information on gender and malaria focus largely on pregnant employed females.

8.5 Expected contribution of the study to knowledge

No study has examined the association between the concepts of employees, workplace health promotion programmes, gender and the MDGs in Nigeria. This study examined the interactions among these variables. Additionally, the research provided understanding of the efforts made by the case organisations to combat malaria and 'other diseases' at workplaces. Furthermore, the study has added to the malaria disease burden estimation, nationally and globally. Griffin et al. (2014)

explained that challenges are associated with malaria burden estimates due to limitations in health reporting systems in sub-Saharan Africa, including Nigeria.

Moreover, Goetzel and Ozminkowski (2008) have identified a dearth of knowledge on the effectiveness of WHPPs. This includes the need to showcase and provide evidence on programmes' effectiveness. So, this study added to the existing information on the impact and effectiveness of WHPPs at the two organisations studied. Cancelliere et al. (2011) reiterated the need for ongoing research in determining characteristics of successful WHPPs, using various research methodologies including comparative case studies and mixed methods. As a result, this study adds to existing knowledge in this regard. Additionally, there is a scarcity of knowledge on the influence of multiple interventions (behavioural adjustment) on CVD prevention among humans (Goldstein et al. 2004; Holme et al. 2006). This study also provides an understanding of this area.

Haile (2012) noted a dearth of knowledge on the association between gender and employees' health, safety and wellbeing. The researcher demonstrated gender-based research with the second research question of this study (section 1.4). Also, there is a dearth of knowledge on the provision and effectiveness of policies and initiatives on work–family balance (Kelly et al. 2008) in the workplace, which is one of the focus areas of this study.

Moreover, there is a scarcity of literature on the role of occupational health and safety in global development plans (e.g., the MDGs and SDGs), which this study made efforts to address.

Consequently, this study has provided an insight into the contributions of the case organisations to the realisation of the MDGs in Nigeria. Additionally, the study helped to identify areas of best practice, areas of commendation, and areas needing improvement in relation to workplace health and wellbeing in the organisation. Findings from the study serve as templates for future development programmes, including the current Sustainable Development Goals (post - 2015, especially in terms of implementation and evaluation).

8.6 Summary

This chapter presented a summary of findings from this study. Both organisations contributed to preventing and combating malaria and 'other diseases' at work, with better performance by organisation 'B'. There was an increase in sickness absence reports among males compared to females at organisation 'A', with no regular pattern observed at organisation 'B'. Organisation 'A' offers less than the required ILO provision on maternity leave (and no paternity leave) but endeavours to run WHPPs relevant to both males and females. Organisation 'B' improved on ILO and national provision on maternity/paternity leave. Generally, both organisations implemented WHPPs relevant to both genders. Furthermore, the chapter outlined the implications of findings on malaria disease control, CVDs or health risks, WHPPs and gender equality in health matters at work. The general implications of findings from this study were related to local, national and international perspectives (including the current global development agenda, the Sustainable Development Goals (SDGs) programme). Lessons learnt in the course of planning and implementing MDGs 3 and 6 can be taken forward under the SDG 3 (promote good health and wellbeing) and SDG 5 (gender equality) agenda. There is a need to intensify efforts for their achievement under this plan. Basically, the highlighted implications showed that more needs to be done in order to achieve health, wellbeing and gender equality on all matters. Additionally, the chapter demonstrated the need for more efforts and global partnership for development by the United Nations member states in the area of preventing CDs (malaria) and NCDs.

Finally, the chapter discussed the expected contribution of the study to knowledge. This included provision of statistics on the national and global malaria disease burden, additional information on gender and health in the workplace, feedback on the implemented WHPPs, information on the contributions made by the case organisations to the attainment of the MDGs, and a sense of direction for successful attainment of the Sustainable Development Goals (appendix 7).

8.7 Conclusion

This chapter provided a summary of findings on the contributions of healthy Nigerian workplaces to the attainment of the MDGs. This included implications of study to future research and the specific contributions of the research to knowledge.

The next chapter discusses the overall conclusion.

CHAPTER NINE

RESEARCH CONCLUSION

9.1 Introduction

This chapter presents the overall conclusion of this thesis, with reference to the preceding chapters. It correlates the research aim (section 1.3) and questions (section 1.4) and highlights the extent to which the aim was achieved. Crucially, the study was designed to appraise the contributions of sustainable, healthy Nigerian workplaces to the achievement of the MDGs, with two relevant MDGs kept in focus. This chapter comprises four segments: introduction, outlined conclusion, research summary and final conclusion.

9.2 The outlined conclusion

In outlining this conclusion, reference is made to the research aim and the extent to which it was achieved, the research title and questions (section 1.4). The study aimed to examine the contributions of two corporate, non-health, transnational, SHWs to the success of the MDGs in Nigeria. As part of the process, an overview of the entire study was presented in chapter one. Explanation was offered in this chapter to justify the choice of two relevant goals (MDGs 3 and 6). Essentially, the research examined the influence of two sustainable, healthy Nigerian organisations on the achievement of the MDGs. The research questions (section 1.4) assessed the contributions of SHWs to the prevention and eradication of malaria and 'other diseases'. 'Other diseases' were defined as any top three predominantly reported health challenges and CVDs or risks at the two case organisations studied (see table 2 and section 1.1.1 for details). Additionally, the second research question (section 1.4) explored the contributions of studied organisations (SHWs) to the achievement of gender equality in workplace health matters. Findings from organisations 'A' and 'B' revealed positive and varied but inadequate contributions to attainment of the MDGs, with better performance recorded at organisation 'B'. This implied the need for organisations to have done more in order to have a significant contribution to the MDGs (the MDGs had 2015 as a target date, but they are now replaced by the Sustainable Development Goals). Hence, the lesson learnt from the MDGs can be

transferred to the implementation of the current SDGs, also termed the 'Global Goals'.

Specifically, chapter two presented one of the three main literature review segments using the systematic approach (Booth and Papaioannou 2012), involving the use of Preferred Reporting Items for Systematic Reviews and Meta-Analyses to source the literature. The checklist for the qualitative quality criteria used was CASP (2014), which is similar to the quality criteria guidelines provided by Guba and Lincoln (1985) and Dixon-Woods et al. (2007). The quantitative checklist criteria used was CLEAR (2014). The review examined the existing strategies on prevention and eradication of malaria and 'other diseases'. The literature was sourced from electronic databases and grey literature. Key findings from the literature revealed varied ways to prevent and stop malaria infection and 'other diseases'. Also, chapter three outlined two of the three main literature review segments. One of these examined relevant articles that discussed gender equality and health at work. The last segment discussed the impact of HWs on employees and organisations. Chapter four discussed the study methodology. Qualitative case study was adopted as the methodology, using multiple data sources (typical of case study research), and pragmatism was the underpinning philosophical stance. Chapter five highlighted the data analysis from organisation 'A' using descriptive and thematic data analysis for numerical and textual data respectively. Data comparison was done within organisation 'A', which led to the interpretation of findings. The organisation is still challenged by both CDs (e.g., malaria tops the list of CDs/health complaints) and NCDs/risk factors (e.g., obesity). Structural facilities (a gym and staff canteen) were missing at this organisation, which makes it difficult for staff to adopt healthy lifestyle choices. Consequently, the situation promotes a high incidence and prevalence of NCDs among the workers. The organisation implemented relevant but inadequate WHPPs (designed to enlighten and educate the workforce about preventive strategies for malaria and 'other diseases'). Also, these were organised to address men's and women's health issues, including prostate health and breast and cervical cancers. The organisation had a sustainable arrangement to react or respond to diseases among employees. On gender and health equality at work, the organisation recorded more sickness absence among men than women. Participant males and females attested to their gender needs being met by the organisation. Furthermore,

chapter six outlined the data analysis from organisation 'B' using the same methods of analysis as organisation 'A'. The organisation 'B' is mainly challenged by CDs, with a negligible record of NCDs. The organisation is endowed with structural facilities to support healthy life choices by employees at work, which explains the low recorded incidence of NCDs at this organisation (e.g., no record of diabetes among the workers). Chapter seven presented a comparison of findings. The two sustainable healthy organisations studied contributed to the achievement of the MDGs but with better performance and contributions by organisation 'B'. Also, this chapter discussed the findings using existing literature to either support or corroborate findings from the case organisations. Finally, the strengths and limitations of this study were presented in this chapter. Chapter eight discussed the summary of findings. Also, the chapter presented the implications of this study and its specific contribution to knowledge. This chapter (nine) outlines the overall conclusion for this thesis.

Specifically, the literature review strategy adopted in this study helped to identify strong, evidence-based practice and potential aftermath policies relevant for workplace health and wellbeing. Also, the multiple methods of data collection deployed in this study (documentary analysis and interview) allowed data comparison, giving varied, flexible opportunities (without bias) and a holistic approach to effectively address the research questions. Consequently, this offers an opportunity for transferability of the study implications to similar settings. Also, using pragmatism as the underpinning philosophy of this study allowed unrestricted access in resolving the research questions in this study, thereby limiting bias possibility and allowing potential transfer of knowledge outcomes from this study.

Moreover, the careful, purposeful, strategic selection of cases and samples in this study makes it more robust for transferability of findings in similar settings. The sampling and selection of the two organisations utilised in this study were based on best HSE performance in the study environment, thus allowing fairness in the choice of participant organisations, one government and one private organisations were selected. Other conscious efforts made to ensure fairness of choice of the workplaces studied included the setting out of selection criteria for both case organisations and participant employees (inclusion and exclusion criteria were

preset and are outlined in sections 4.14 and 4.15).

Also, in order to ensure maximum case variation, the researcher checked that both gender – male and female were included among study participants. Also, the six Nigerian geopolitical zones were represented among the participants.

However, the transferability of the findings from this study is limited to similar HWs; but cannot be applied to all workplaces. Also, the use of convenience sampling deployed at organisation 'B' following sample inadequacy restricts the transfer of findings to other settings.

9.3 Summary

This study assessed and revealed the contributions made by the SHWs studied (defined in table 2) to the realisation of the MDGs. The relevant MDGs examined included MDG 6 (combating malaria and 'other diseases') plus MDG 3 (gender equality in health at work), both reflected in table 1.

The study was conducted in Nigeria using qualitative case study as the methodology. Data collection was in two phases. The first phase involved accessing relevant records including occupational health and clinic attendance records. The second phase comprised one-to-one interviews using the semi-structured interview guide. Descriptive data analysis was employed for the numerical data, while thematic data analysis was used for textual components. These data were then compared. Findings revealed the case organisations' contributions to the prevention and eradication of malaria and 'other diseases' (through the organisation of various workplace health promotion programmes and provision of treatment as applicable). Also, the research revealed arrangements for free medical services by these workplaces with a view to combating diseases among the workforce. Some of the WHPPs organised were gender-specific, thus addressing goal 3 of the MDGs (gender equality in health matters). On gender and health at work, there were records of increased sickness absence among male compared to female staff at 'A', but no pattern observed at 'B'. At both organisations 'A' and 'B', there were relevant workplace policies (but these need reviewing for improvement) to promote the health and wellbeing of employees. However, there was a lack of some basic structural

facilities (canteen and fitness centre) to support healthy lifestyle choices at organisation 'A'. Also, both organisations implemented gender-based WHPPs and had inadequate policies and practices in support of health and wellbeing for the gender groups. In particular, there is a need for male-specific health and wellbeing policies at both organisations.

Furthermore, the ever-changing global situation (world dynamism), including changes to global market situations (corporate, business organisations and manufacturing companies), has led to increased and unstable occupational and non-occupational health risks/diseases at workplaces. This situation is of great concern and thus affects the world's socio-economic development. The studies reviewed revealed that employers who make conscious efforts to ensure and sustain the health and wellbeing of their employees (in the short or long run) had a better competitive advantage in the market (locally and globally). Consequently, such organisations had a positive impact on national and world development growth agendas including the recently concluded development programme the MDGs (MDGs). Such workplaces had the minimum structural facilities required to support this process at work. The literature has recognised the structural facilities required to ensure sustainability of a healthy workplace to include a responsible department or division (e.g., occupational health services or health, safety and environment division) coordinating or managing workplace health and wellbeing matters. Other identified requirements for a healthy workplace include the existence of HSE policy, provision of canteens, fitness centres and other relevant health and welfare facilities at work.

Meanwhile, fundamental to occupational health practice is preventive and proactive approach to health, safety and wellbeing issues among the workforce. However, there is a dearth of literature on the role of occupational health and safety to global development plans, including the MDGs (and SDGs), which this study made efforts to establish.

The MDGs, adopted in September 2000 by heads of state with a view to directly engaging with the world's poor population (United Nations Human Development Report 2003), promoted global development in all its totality, which led to an

unparalleled period of cooperation among the United Nations' member states. The MDG programmes allowed positive associations and relations between developing and developed nations through reduction of poverty/hunger and disease, promoting gender equity and encouraging a high level of teamwork among nations. Effective associations and partnerships among member states were demonstrated by the provision of funding, technical expertise and support by developed nations to the developing nations (MDG 8). This was with the intention of assisting these nations to achieve the MDGs 1 – 7. The success accrued from the MDGs is not restricted to the set deadline (September 2015) but also serves as a foundation for the current Sustainable Development Goals and any other future development programmes. So far, the MDGs have been referred to as the most successful development initiative of our time (Manning 2009). The MDGs performance suggested four strategic contributions to global connectivity. These are promotion of political consensus; identification of focus for advocacy; identifying and targeting potential users; and improvement of humanitarian aids and evaluation strategy for development projects (Waage et al. 2010).

Despite this documented success from the MDGs, Manning (2009) noted that the global capacity to attain 'health for all' is doubtful in the 21st century. Therefore, achievements realised through the just - concluded MDGs could be lost if stringent measures are not put in place to address the fast - growing incidences of chronic NCDs and CDs in sub-Saharan Africa. The negative impact of inadequate attention to or inaction on these diseases (especially among the working-age group) could affect the economy and social development in this region. As a result, cooperation and participation are necessary for all stakeholders with a view to instituting programmes that will decisively meet the health and wellbeing needs of the workforce including those affected with chronic illnesses.

9.4 Final conclusion

This study aimed to determine the contributions of sustainable, healthy Nigerian workplaces to the achievement of the MDGs. Two research questions (section 1.4) were formulated to keep in focus the relevant two (of eight) MDGs for this study. These two goals 3 and 6 formed the assessment template to determine the

contributions of the workplaces studied (sustainable healthy organisations) to the achievement of the MDGs. A multi-method approach to data gathering and analysis was utilised to realise the aim of this study.

What is clear from the study is the positive but inadequate contributions (in terms of policies, practices and accounts of experience provided by study participants) of both organisations 'A' and 'B' to the achievement of the MDGs. Both organisations implemented preventive health programmes in the form of WHPPs but with inadequate frequency especially at organisation 'A'. These preventive WHPPs were directed at combating malaria and 'other diseases' and ensuring gender health equality in the workplace. Also, functional reactive health and wellbeing measures were put in place by these two SHWs to combat diseases among the workforce. These efforts seem inadequate, with CDs and NCDs recorded at organisation 'A', and CDs mainly at 'B'. Although the reported situation was better at organisation 'B' than 'A'.

On gender equality at work, and with reference to health matters, both organisations contributed to bridging the gap, but inequality still persists. Hence, the realisation of MDG 3 was partial and inadequate. There was a higher number of male than female staff at both organisations. Also, there were more men at decision-making levels than women. There were no existing gender-based data distinguishing the predominant health challenges (recorded illnesses) at either organisation. Therefore, this study confirmed there is a dearth of gender-specific health records and research in the Nigerian workplaces (Haile 2012).

However, there were records of sickness absence by gender, which formed part of the data in addition to interviews that determined the level of health equality between the two gender categories at both SHWs. From this data, there were higher sickness absence record among males at both organisations compared with females. With higher reported sickness absence among males than females, it may be that women were suffering from a situation called presenteeism (working with ill health) considering their situation as minorities at both SHWs studied. As such, may be quite reluctant to report sick. So, there is a need to balance and ensure equity at all levels between males and females from recruitments to decision-making levels at workplaces. Hence,

Braveman and Gruskin (2003) admitted that equalising opportunities for health at work leads to the most important social and economic determinants of health and development being addressed. Sorlin et al. (2011), in a Swedish study, concluded that organisations with smaller gender gaps have similar sickness absence rates for both sexes. Also, the WHO (2010d) reported that WHPPs that take account of sex/gender achieve better health and wellbeing among employees. Consequently, there is a need to close gender gaps in all aspects of human endeavour in order to achieve equity/equality between men and women. This can be achieved through sensitisation/enlightenment, formulation and implementation of relevant policies and practice at work. These strategies will assist with the achievement of gender equality in all human interactions (or help to realise the aim or set targets for any development plan, including the achievement of SD 5 of the 'Global Goals').

Finally, considering the research title and aim (section 1.3), findings from this study showed that SHWs contributed, but inadequately, to the achievement of goals 3 and 6 of the MDGs (see table 1) in Nigeria.

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APPENDICES

Appendix 1: Sample consent form

Research Title: Sustainability of a healthy workplace in the achievement of MDGs (MDGs) in Nigeria.

Name of researcher: SaudatAdeka

Please initial the boxes

1. I confirm that I have read and understood the research information sheet (version 2) and had at least 24 hours to consider the information. Also, the researcher has satisfactorily answered questions about the raised issues and concerns for the study. ☐
2. I understand that my participation is voluntary and I have the choice to freely withdraw within three months of data collection, without any reason(s) given and any legal rights affected. ☐
3. I understand that the conversation during the interview with the researcher will be audio- recorded, which I give permission and for the transcription of this data. I am assured that the recorded data and the transcriptions will be stored in a password protected computer (accessible only to researcher and the supervisors) and destroyed after three years of study completion. ☐
4. I give permission for the researcher to have access to my Occupational Health and clinic attendance records. ☐
5. I give permission for my data to be part of the report that my organisation will see and I understand that I will also receive a copy. ☐
6. I understand that anonymised quotes from the interview may be used in the researcher's thesis and subsequent publications. ☐
7. I understand that my personal details and other identifiable information will not be used in any documentation or publications. ☐
8. I understand that all hard copies of this research data will be securely locked in a filing cabinet (accessible to the researcher and supervisors only) and be destroyed after three years of study completion. ☐
9. I agree to take part in this research. ☐

_____

Name of participant Date Signature

_____

Name of researcher Date Signature

Appendix 2: Ethics approval confirmation email

Mon 08/12/2014, 10:01

Dear Saudat

Ethics Application: E397

Your ethics application has now been reviewed by the independent reviewers. This includes the amendments submitted by you on 6th November 2014.

Please note the attached amendments to the consent form. The reviewers have asked that you incorporate these amendments into your final document version.

Please note that the reviewers have advised on the following points:

(a) A9.4 (Application Form) – mental health and mental capacity are two different things, it is not enough to assume that if someone has the cognitive capacity to read the information that this covers mental health. It is entirely possible that a sample of employees might contain people with mental health issues so this needs looking at.

(b) Sentences like 'Thank you very much for the anticipated favourable response' need removing from invitations and information as could be seen as coercions.

Please note that subject to you making the appropriate changes to the consent form and taking on board the responses above, I am pleased to confirm that this study has received ethics approval, with no further scrutiny required.

Please add a sentence onto any material that you share with participants confirming that ethics approval has been granted by the Chair of the Humanities, Social and Health Sciences Research Ethics Panel at the University of Bradford on 8th December 2014.

Best Wishes

Omar Ali

Research Funding Co-ordinator

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Appendix 3: The Information Sheet

Sustainability of a healthy workplace in the achievement of MDGs (MDGs) in Nigeria: Research Information Sheet

Background

The aim of this study is to explore the role of a 'healthy' workplaces in the realisation of MDGs (MDGs) in Nigeria. All member states including Nigeria agreed to work towards the achievement of the MDGs. Ensuring their attainment offer better chance towards the realisation of most significant economic, political and social challenges in the modern time. As a result, MDGs require the participation of multi-stakeholders. The sixth goal, combating malaria and 'other diseases' is one of the health MDGs. The importance of improvement in people's health and the environment to sustainable development and consequently to productive life cannot be overemphasised.

So, this study seeks to examine the effort(s) of your organisation in eradicating malaria and predominantly reported disease(s) at your workplace. Also, the study seeks to determine consideration of gender diversity in programme planning and policy for your workplace health matters including workplace health promotion and disease prevention efforts.

Ethics approval

The ethic approval for this study was granted by the Chair of the Humanities, Social and Health Sciences Research Ethics Panel at the University of Bradford on 8th December 2014.

Purpose of the semi-structured interview

This study will involve interviews of administrative secretaries and their line managers of your organisation using a semi-structured interview guide.

The essence of the interview is to explore participants' experience of workplace health and wellbeing services (including workplace health promotion programmes, health maintenance and intervention organised) at your organisation. Also, respondents will be asked if these programmes addressed or met their gender needs.

Why have you been invited?

You were given this information sheet alongside with invitation to participate in the study because of the followings: you are one of the employees in this establishment, a line manager or an administrative secretary.

Do you have to take part?

It is entirely your decision. You are free to decide your participation in this study. If you decide not to take part, your employment will not be affected in any way; neither would it affect your current or future relationship with the University of Bradford. You are also free to stop participating later after initial agreement to participate. This decision can be done within three months of data collection, expressed verbally, via email, telephone or through a letter stating your decline in participation in this study. At this instance, there will be no obligation to give reason.

What will happen if you do take part?

If you agree to take part in the study, a face-to-face interview, telephone or audio calls through virtual means will be arranged at your convenience to conduct the interview. The interview is scheduled to last maximum of 45 minutes. During this time, you will be asked about your experiences regarding health and wellbeing services at your organisation. This include account of experience of the implemented Workplace Health Promotion Programmes (WHPP), health intervention and health maintenance programmes. Also, you will have the opportunity to say if these programmes met your gender needs.

The last part of the interview requires anonymous background information.

What will happen to the recorded interview data?

The recorded interviews will be uploaded from the audio recorder and saved as password protected document on researchers' computer. The recordings will be transcribed by the researcher. The transcriptions will also be stored and protected with password on a computer. The transcriptions will be analysed and when completed, the audio recordings of the interviews will be stored on a CD. This will be kept in a locked filing cabinet together with other hard copies of data for a period of no more than three years after completion of this research. The data will then be securely destroyed. The filing cabinet will be accessed only by the researcher and the supervisors.

What are the possible risks of taking part?

There are no risks involved in the study. If you do not agree to take part, there will be no implication on you or your organisation.

What are the benefits of taking part?

There may be no direct benefit to you as an individual and your organisations. However, the results of the study may help to improve the existing health policies locally at your workplace or formulate relevant new, Nigeria as a nation and at the global community.

What if you experience a problem with this study?

If you have any query or concern, please contact the researcher-Saudat Adeka on+447435273845 or +2348020714807 or send an e-mail to S.adeka@student.bradford.ac.uk or oluwatoyinsaidat@yahoo.com. Also, you can call my primary supervisor- Professor Uduak Archibong on 01274236347/233816 or Email: u.e.archibong@bradford.ac.uk and associate supervisor- Dr. Tracy McClelland on 01274236571 or e-mail: g.t.McClelland@bradford.ac.uk.

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Appendix 4: Semi-Structured Interview Guide

Interview Schedule

Introduction

I am Saudat Adeka**,** the research student from school of health studies, University of Bradford. Thank you for agreeing to participate in this interview. Few questions will be sought to share your experiences and understanding of arrangement regarding health and wellbeing at your workplace. This will include your experience on workplace health promotion programmes and diseases prevention efforts at your workplace. Also, the interview will seek your experience on gender diversity and health at work. Kindly assist by talking clearly (as much as possible) to help with the digital recording. Also, can I remind you that the information provided by you will remain confidential and there are no risks involved during this interview and in the entire study except your valued time. The question is categorised into four areas presented as follows:

Theme 1:Healthy workplace, employees and organisation.

i What do you think of your workplace in terms of occupational health and safety arrangement?

---

ii. What do you consider as the effect of your workplace occupational health and wellbeing services on the workforce and the organisation?

Theme 2:Health and wellbeing

i.How would you rate your overall health and wellbeing in the past three Years?

---

ii. Do you think your health and wellbeing has been given the required attention in the last three years?

Theme 3: Experiences and understanding of the workplace health promotion programmes andsimilar initiatives.

i**.** Have you participated in any of the workplace health sensitisation and wellness programmes in the last three years? If yes, can you outline them?

---

ii.Do you have observation or comments (negative or positive) on any of these programmes?

---

iii. Which of these programmes did you find most useful and least useful respectively?

---

iv. Do you feel that any of these programs has assisted in achieving positive lifestyle or work-life balance or improved health and wellbeing?

Theme 4: gender diversity, health and wellbeing programmes.

i.Have you heard about equal opportunity at workplace?

ii. Literarily, what do you know/understand by a gender- equal workplace?

---

iii.Do you consider it as a necessity to have a gender equality policy, plan and implementation at workplace with consideration forhealth, safety and wellbeing services?

---

iv. Do you feel that your gender needs were considered in planning and implementation of workplace health promotion programmes?

Background Information

Sex----------Department----------

Year of Employment----------How long have you served in this location?-----

Position----------Nationality/Geopolitical Zone----------

Closing remarks.

You are allowed to make any other comments or queries not yet discussed so far. However, in the absence of no further comments or queries, I would like to thank you very much for your time. We have come to the end of the interview.A summary of findings from this study shall be forwarded to your establishment which will be accessible to all employees. However, if you would like a copy sent to you directly, kindly contact me using any of my contact links provided in the research information sheet.

Appendix 5: Adapted data collection tool for the semi-structure interview guide

HOW HEALTHY IS YOUR WORKPLACE

Instruction

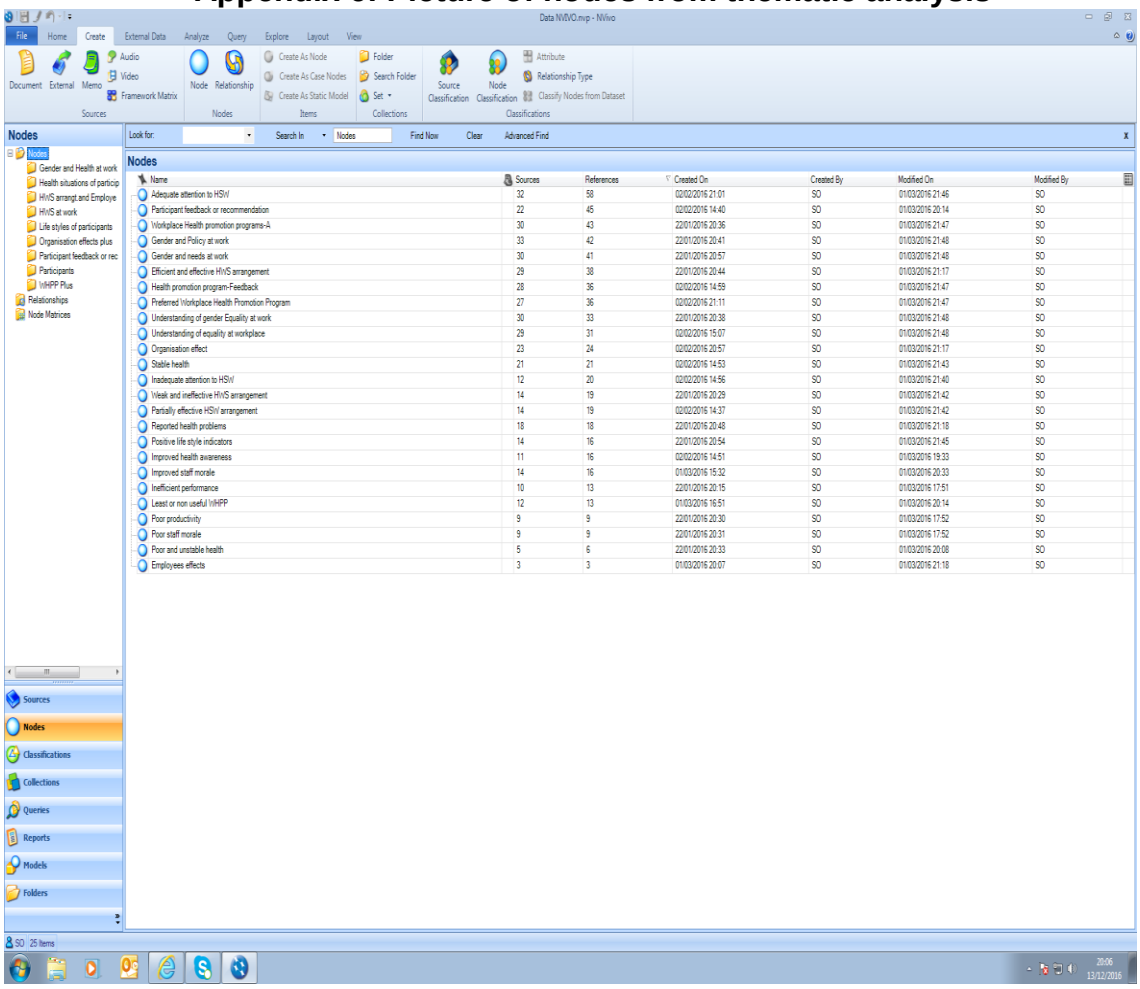
In the following checklist, select a score between 1 (least healthy) and 10 (healthiest) which best describes your workplace for each category on the list. Feel free to add any remarks to illustrate or clarify your score.

	Score (1-10)	Remarks
Workplace polices (PO)		
PO1 – Healthy workplace policy in place		
PO1 – Enforced alcohol and drug-free workplace		
PO1 – High level of nutrition and food safety in canteen		
PO2 – Health and Safety Committee established		
PO3 – Established indicators for monitoring progress		
PO4 – Education and training on health and safety		
PO5 – Human resources management policies		
The organisational Environment (OE)		
OE1 – Worker participation in decision-making		
OE1 – Realistic deadlines established		
OE1 – Opportunity to do a variety of tasks		
OE1 – Sufficient break time		
OE1 – Good relations among staff		
OE1 – Recognition for high performance		
OE2 – Shift work causes minimum harm		
OE3 – Support provided to retiring staff		
OE4 – Protection for staff with special needs		

The Physical Environment (PE)		
PE1 – Provision of a safe and healthy environment		
PE2 – Minimized exposure to work-related hazards		
PE3 – Safe use of personal protective equipment		
PE4 – Manager held accountable for health and safety		
PE5 – Adequate sanitation and water		
Lifestyles and Personal Health Skills (HL)		
HL1 – Support for healthy lifestyles		
HL2 – Programmes in nutrition		
HL2 – Programmes in smoking cessation		
HL2 – Programmes in physical fitness		
HL2 – Programmes in stress management		
HL2 – Programmes in reproductive and sexual health		
HL3 – Entreprise connects with family and community		
Health Service (HS)		
HS1 – Basic health service available to staff		
HS2 – Rehabilitation and return to work programmes		
HS3 – Participation of local health services		
Impact on the External Environment (EE)		
EE1 – Prevents pollution of external environment		
EE2 – Access to safe transport to and from work		
EE3 – Plays positive role in community life		

Source: WHO (1999)

Appendix 6: Picture of nodes from thematic analysis



Appendix 7: The 17 Sustainable Development Goals(SDGs) (Global Goals) for 2030

SD	FOCUS	SD	FOCUS
1	No poverty	10	Reduced inequality
2	Zero hunger	11	Sustainable cities and communities
3	Promote good health and wellbeing (similar to MDG 6)	12	Responsible consumption and production
4	Quality Education	13	Climate action
5	Gender Equality (similar to MDG 3)	14	Life below water
6	Cleanwater and sanitation	15	Life on land
7	Affordable and clean energy	16	Peace and Justice, strong institution
8	Decent work and economic growth	17	Partnership for development
9.	Industry, Innovation and infrastructure		

Appendix 8 : Literature Review: a summary of included primary studies

First Author	Year	Methodology	Country	Study/Theme
Adja et al.	2011	Quantitative	Cote-divoire	Perennial malaria transmission
Akinbola and Omotosho	2013	Quantitative	Nigeria	Predicting malaria occurrence
Alves	2002	Quantitative	Brazil	Prevalence of asymptomaticmalaria
Ameh et al.	2016	Quantitative	Nigeria	Consequences of Malaria in pregnancy(MiP)
Aregawi	2014	Quantitative	Ethiopia	Trends in Malaria
Arnold etal.	2011	Quantitative	USA	obstructive coronary artery disease
Assah	2011	Mixed	Cameroun	Urbanisation, physical activity, and metabolic health
Awolola	2013	Quantitative	Nigeria	Dynamics of the malaria-vector populations
Backhans etal.	2007	Qualitative	Sweden	Gender equality and health outcomes
Balogun	2014	Quantitative	Nigeria	Asymptomatic malaria in pregnancy
Barnes	2010	Quantitative	England	Chronic obstructive pulmonary disease
Berger et al.	2009	Quantitative	USA	Sex differences in mortality and acute coronary syndrome
Bousema et al.	2004	Quantitative	Kenya	Carriage of Plasmodium falciparum gametocyte

First Author (Continued)	Year	Methodology	Country	Study/Theme
Braveman and Gruskin	2003	Qualitative	USA	Equity in health
Burt	2014	Quantitative	England	Heritable strategies for controlling insect vectors of disease
Casini	2013	Mixed	Belgium	Gender difference in sickness absence from work
Cui et al.	2012	Quantitative	Greater Mekong Subregion-china	Malaria in the Greater Mekong Subregion
Dal-Bianco	2007	Quantitative	Gabon	High prevalence of asymptomatic plasmodium falciparum infection in
Damien et al.	2016	Quantitative	Benin	Effectiveness of insecticidal nets on uncomplicated clinical malaria
Dankel et al.	2016	Quantitative	USA	“fat but fit” paradigm
Dawaki et al.	2016	Quantitative	Nigeria	Knowledge, Attitude and Practice towards malaria.
Dickson-Swift et al.	2014	Qualitative	Australia	Employees’ health and Wellbeing
Djenontin	2010	Quantitative	Republic of Benin	Transmission of insecticide resistance malaria vectors

First Author (Continued)	Year	Methodology	Country	Study/Theme
Doi and Minowa	2003	Quantitative	Japan	Gender differences in excessive daytime sleepiness
Efunshile and Akintunde	2011	Quantitative	Nigeria	Use and Effects of Malaria control measure in pregnancy
Elwer et al.	2013	Mixed	Sweden	Patterns of Gender Equality at workplaces
Falade et al.	2007	Quantitative	Nigeria	Epidemiology ofmalaria
Frey et al.	2006	Quantitative	Burkinafaso	Compliance with Insecticide treated nets
Frith and Gleeson	2004	Qualitative	England	Management of body image among men
Garley et al.	2013	Quantitative	Nigeria	Gender differences in the use of insecticide treated nets
Haile	2012	Quantitative	Britain	Workplace gender diversity and job-related well-being
Harris et al.	2010	Quantitative	Temotu Province Solomon Ireland	large proportion of of asymptomatic Plasmodium infections with low and sub-microscopic parasite densities in the low transmission
Hay et al.	2001	Quantitative	Kenya	Early warning sign of malaria

First Author (Continued)	Year	Methodology	Country	Study/Theme
Holme et al.	2006	Mixed	Norway	Effect of dietary and anti smoking advice on the incidence of myocardial infaction:
Islam et al.	2001	Quantitative	USA	Gender differences in workplace illnesses.
Kadiri	2005	Quantitative	Nigeria	Tackling CVD disease
Kaplan et al.	2014	Quantitative	Hispanic	Body Mass Index, Sex, and CVD diseases risk factors
Kiberenge et al.	2010	Mixed	Kenya	Knowledge, attitude, and practices related to diabetes
Kremer and Steenbeek	2010	Quantitative	Dutch	Avoidable sickness absence
Lauffenburger et al.	2014	Quantitative	Quantitative	Racial/Ethnic and gender gaps in the use of and aherence to evidence-based preventive therapies among elderly
Lee et al.	2014	Quantitative	USA	Leisure and CVD mortality risk
Linnan et al.	2008	Mixed	USA	2004 national worksitehealth promotion
Littrell et al.	2011	Quantitative	Cambodia	Case management of malaria fever
Loeppke et al.	2009	Quantitative	USA	Health and productivity

First Author (Continued)	**Year**	**Methodology**	**Country**	**Study/Theme**
Lowassa et al.	2012	Quantitative	Tanzania	Social economic factor and malaria transmission
Lowe et al.	2003	Quantitative	Canada	Correlates of employees' perceptions of a healthy work environment
Makrides et al.	2010	Quantitative	Atlantic Canada	Modifiable health risks
Masters et al.	2013	Quantitative	USA	The Impact of Obesity on US Mortality Levels
Mathenge et al.	2010	Mixed	Kenya	Urbanization , ethnicity and CVD risk in a population
Mensah and Mokdad	2005	Quantitative	USA	State of disparities in CVD health
Moiroux et al.	2012a	Quantitative	Benin	Dry season determinants of malaria disease and net use
Moiroux et al.	2012b	Quantitative	Benin	Changes in Anopheles funestus biting behavior following universal coverage of long-lasting insecticidal
Mokdad et al.	2004	Quantitative	USA	Actual causes of death
Mokdad et al.	2005	Quantitative	USA	Prevention and control of chronic diseases and adverse health outcomes

First Author (Continued)	Year	Methodology	Country	Study/Theme
Msellem et al.	2009	Quantitative	Zanzibar	Influence of rapid malaria diagnostic tests on treatment and health outcome
Msyamboza et al.	2011	Quantitative	Malawi	Risk factors of Chronic NCDs
Muchira et al.	2015	Quantitative	Kenyan	Distribution and characteristics of CVD-metabolic diseases
Murphy et al.	2000	Quantitative	Russia	Mortality by educational level
Musich et al.	2006	Quantitative	Australia	Corporate work environmentand presenteeism
Naidoo et al.	2011	Quantitative	South Africa	Occupational activities and malaria among women
Oke and Salihu	2016	Quantitative	Nigeria	Intermittent preventive treatment of malaria in pregnancy
Otten et al.	2009	Quantitative	Rwanda	Reduction of malaria cases and deaths
Oyeyemi et al.	2016	Quantitative	Nigeria	Reliability of rapid diagnotic tests in diagnosing pregnancy and infant-associated malaria

First Author (Continued)	Year	Methodology	Country	Study/Theme
Pelletier et al.	2004	Quantitative	USA	Change in health risks and work productivity
Phyllis et al.	2011	Quantitative	USA	Work-time flexibility promote health behaviours and well-being
Robertson et al.	2012	Quantitative	USA	Poor health but not absent: prevalence, predictors, and outcomes of presenteeism
Rogerson et al.	2010	Quantitative	Australia	Malaria in pregnancy
Savikko et al.	2008	Quantitative	Korea	No higher risks of problemdrinking and illness for women in male-dominated occupations.
Shekalaghe et al.	2010	Quantitative	Tanzania	Primaquine Clears Submicroscopic Plasmodium Falciparum Gametocytes
Scuracchio	2011	Quantitative	Brazil	Transfusion-transmitted malaria
Sorlin et al.	2011	Quantitative	Sweden	Sickness absence in gender-equal companies
Sturn	2003	Quantitative	USA	Increase in clinical obesity

First Author (Continued)	Year	Methodology	Country	Study/Theme
Sturn	2007	Quantitative	USA	Increase in morbidity obesity
Taiwo	2009	Quantitative	USA	Sex difference and sicknesspatterns
Tanuseputro	2003	Quantitative	Canada	Risk factors for CVD disease
Toe et al.	2009	Quantitative	Burkinafaso	Decreased motivation in the use of Insecticide treated net
Uretsky et al.	2007	Quantitative	USA	Obesity paradox in patients with hypertension and coronary artery diseae
Vava et al.	2007	Quantitative	Mali	Plasmodium falciparum infection prevalence in asymptomatic
Weerasinghe	2002	Quantitative	China	A safety and efficacy trial of artesunate, sulphadoxine- pyrimethamine and primaquinein P falciparum malaria
Xiaou et al.	2015	Quantitative	China	Sex differences inPatients with Acute Myocardial Infarction
Zhang et al.	2012	Quantitative	USA	Age-specificgenderdifferences in mortality by type of acute myocardial Infaction

Appendix 9: Quality appraisal

Researchers have had reasons to screen a significant number of studies (hundreds of articles) using quality appraisal tools (Mallett et al. 2012) as was done in this study.

Most included studies scored a minimum of 8 'Yeses' out of 10 questions on CASP and CLEAR checklists. However, majority - 431 were excluded for lack of a clear aim or objective, potentially weakening the design. Other reasons for exclusions were the use of health care providers (e.g., nurses) as study population leading to the exclusion of 28 articles (articles used/included in this review were studies focused on non-health workers/institutions).

Specifically, of 193 full-text articles critically appraised in figure 1, 56 were used for the literature review excluding 137 articles. 43 of these included articles scored 10 'Yes' of 10 questions, while 7 scored 9 'Yes' of 10 questions and 6 scored 8 'Yes' of 10on the quality appraisal checklist . Furthermore, 22 of these excluded full-text articles scored 7 'Yes' of 10 questions and were excluded for inappropriate sampling procedure, poorly discussed research limitations, inappropriate statistical procedures and for using instruments that were not appropriate with the research questions. In addition, 115 of the excluded articles scored less than 5 'Yes' of 10, and were thus excluded for unclear and inappropriate study design, non-clear sampling design and data. Other exclusion reasons were inappropriate statistical procedures, poorly described methods, and use of unsuitable instruments in addressing the research questions.

Also, of 152 full-text articles that were critically appraised in figure 9, 18 were utilised for the literature review process, thereby excluding 134 articles. 12 of the 18 articles that were included in the review scored 10 'Yes' of 10 questions on the quality appraisal checklist.4 scored 9 'Yes' of 10 questions and 2 scored 8 'Yes' of 10 questions. Of the excluded articles, 3 scored 7 'Yes' of 10 questions and were excluded for unclear aim of research, inappropriate methodology and unsuitable recruitment strategy. Furthermore, 29 scored5 'Yes' of 10 questions and were thus excluded for unclear and inappropriate study design, ambiguous sampling design,

poorly recognised data and mismatched research questions. Also, other reasons for excluding 102 articles that scored 3 ‘Yes’ of 10questions were due to unclear study design, biased results following unsuitable data collection process, poorly described methods, use of unsuitable instruments in addressing the research questions, non-supported findings and conclusion from data.

Additionally, of 114 full-text articles that were critically appraised in figure 10, 11 were used for the review, thus excluding 103 articles. 9 of these included articles scored 10 ‘Yes’ of 10 questions on the quality appraisal checklist while 2 scored 9 of 10 ‘Yes’. Among the excluded articles, 4 scored 7 ‘Yes’ of 10 and were excluded. Reasons for their exclusions included poorly described methods, inappropriate instruments in addressing research questions, and poorly discussed research limitations. Furthermore, 99 scored below 5 ‘Yes’ of 10, thus, were excluded for unclear and inappropriate study design, ambiguous sampling design, poorly recognized data and mismatched of research questions.

Appendix 10: List of presentations

Presentations made at international conferences in the course of the PhD

1. **Title:** Healthy workplace and MDGs (MDGs): A systematic approach to literature review. S. Adeka, Prof. U. Archibong and Dr. G. McClelland
   Conference: Making Diversity Intervention Count Conference

   Date: June, 2014

2. **Title:** Gender equality in health at work and MDGs (MDGs): A systematic approach to literature review – S. Adeka, Prof. U. Archibong and Dr. G. McClelland
   Conference: Making Diversity Intervention Count Conference

   Date: June, 2015

3. **Title:** A review of gender equality in health, well-being and safety at Work: A case study of an Organisation in Nigeria. S. Adeka
   Conference: Making Diversity Intervention Count Conference

   Date: June, 2016

4. **Title:** Healthy work environment and MDGs (MDGs) attainment: A case study of an organisation. S. Adeka, Prof. U. Archibong and Dr. G. McClelland.
   Conference: Royal College of Nursing Centenary Conference

   Date: November, 2016